MacWEEK

07.30.91 Volume 5 Number 26 THE NEWSWEEKLY FOR MACINTOSH MANAGERS

Real soon ...

ClarisWorks
Preview of Claris' forthcoming integrated-software package
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PacerForum
Preview of Pacer's groupware product
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Outbound turns new page with Mac Notebook System

By Raines Cohen

Boulder, Colo. — If an Apple label is important to you when purchasing a notebook Mac, wait until fall. But if full Mac compatibility in a 6-pound package will do, Outbound Systems Inc. is expected to ship the Outbound Notebook System this week.

Outbound's new notebook, offered in a variety of configurations, aims to underprice Apple and beat it to the market.

Outbound has been shipping a portable Mac, the Outbound Laptop System, for over a year. The company is the only laptop maker sanctioned by Apple to include in its machines ROM chips taken from used Macs.

But many users thought the Outbound laptop was limited in functionality and found it too cumbersome to set up, even compared with Apple's heavier and bulkier Mac Portable. "We learned a lot from the current product," said Bob Louthon, Outbound chief operating officer.

The new Outbound Notebook folds down to just 8.5 by 11 inches and is 2.5 inches thick. Unlike Apple's low-end notebook due this fall, the system can accommodate both a SuperDrive-compatible floppy drive and up to a 60-Mbyte hard disk internally. The hard disk is easily removed or swapped, so multiple drives can be used in one machine.

The display is a sidelit 10-inch LCD with a resolution of 640 by 480 pixels; the display's response time is just 100 milliseconds, half that of Outbound's previous displays, mak-

See Outbound, Page 122

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CD-ROM drives
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Apple switching E-mail engine onto new track

By Carolyn Said and Margie Wylie

Cupertino, Calif. — AppleMail won't resemble electronic mail much when the store-and-forward engine appears under a new name as part of System 7.1 later this year.

Responding to angry third-party E-mail vendors, Apple has backed off from creating its own E-mail front end and is promoting the repackaged engine as an ideal platform for collaborative applications.

Although E-mail vendors will still be able to hook their front ends into the store-and-forward and directory services through a low-level toolbox, Apple also will provide Apple events that let other applications call on the engine's services.

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Twin towers will top Mac line

Desktop '040 model comes with Ethernet

By Andrew Gore

Cupertino, Calif. — While more ordinary looking than Apple's new Mac IIex, the desktop '040 Mac due this fall packs much of the power of its taller sibling, according to sources.

The smaller machine is identical in size to the Mac IIcx and IIci but designed to stand vertically on the desktop, sources said. Apple will offer an '040 logic-board upgrade to owners of the three-slot Macs.

Under the hood, however, the desktop '040 Mac features an entirely different design.

It uses a 25-MHz 68040 CPU that has two 4-Kbyte caches and a floating-point unit built in. The '040 Mac also includes Apple's new 1-Mbyte ROMs and comes with 4 Mbytes of RAM soldered onto the logic board, according to sources.

There is one RAM expansion bank with four SIMM (single in-line memory module) slots. The slots can accept either 1-Mbyte, 4-Mbyte or 16-Mbyte 80-nanosecond SIMMs for a maximum of 68

See Desktop Mac, Page 124

Pictured above are Apple's new Macintosh IIex (left) and the desktop version of the 68040 tower Mac (right).

Managers eager for floor-standing Mac

By Andrew Gore

Cupertino, Calif. — While Apple prepares its two new 68040-based Macs for introduction Oct. 21, volume buyers are evaluating how the desktop and tower Macs might help fill their companies' needs.

▸ **Test results.** The first thing Mac managers want to know about '040 Macs is, "How fast for how much?"

Overall, both machines ran anywhere from 25 percent to 100 percent faster than a Mac IIfx, sources said. Computing tasks that require extensive disk I/O ran toward the low range of the '040 machines' performance range, while tasks that primarily consisted of floating-point math ran significantly faster.

Although test results for the '040 tower, currently called the Macintosh IIex, were slightly better than the results for the '040 desktop machine (see story, left), the difference was not significant, according to sources. The Mac IIex benefits from a faster internal SCSI chip than the desktop unit, but only the fastest hard drives can take advantage of that speed boost.

The '040 desktop Mac is expected to retail for about $5,900 with 4 Mbytes of RAM and a SuperDrive; $6,500 with an 80-Mbyte hard

See IIex, Page 124

One Scanner, two printers

By Andrew Gore and Neil McManus

San Jose, Calif. — Apple will extend the boundaries of gray-scale and halftoning technology when it introduces a new scanner and two LaserWriters at the Seybold Seminar on Desktop Publishing in October here.

Apple's Image Publishing product rollout will include a new Apple scanner capable of 256 levels of gray, feature-packed scanning software and two new 300-dpi LaserWriters that produce high-resolution halftones.

▸ **Apple One Scanner.** The One Scanner, expected to be priced at $1,499, will replace the $1,799 Apple Scanner, which offers only 16 gray levels.

In addition to 256 gray levels, the One Scanner's improvements include three scanning speeds and the ability to scan at any resolution from 72 dpi to 300 dpi. It has a

See Scanner, Page 122

New standards to extend AppleTalk

By Margie Wylie

Cupertino, Calif. — There won't be an AppleTalk Phase 3 anytime soon, but network managers should find relief from AppleTalk's lack of management capabilities and other niggling problems in the months to come.

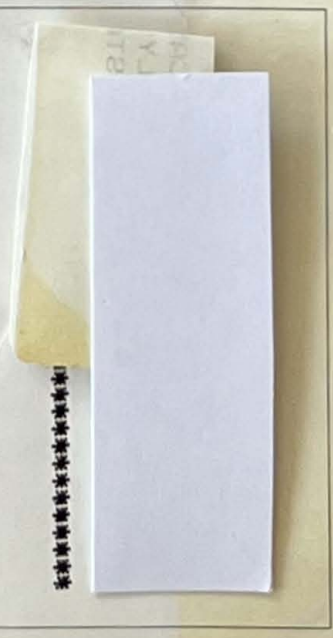
While it is praised for its simplicity and extraordinary network services, AppleTalk has been criticized for being slow over wide-area links, lacking management features and being unreliable (as well as slow) over remote connections.

Developers outside Apple have been compensating for AppleTalk's weaknesses in their own routers, dial-in products and management software for some years, but Apple is just beginning to look into setting standards in these areas.

▸ **Management.** Embracing the standard SNMP (Simple Net-

See AppleTalk, Page 124

NEWSPAPER SECOND CLASS



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25 MHz PowerCache		✓	✓	✓	✓	✓		
40 MHz PowerCache	Math Chip	✓	✓	✓	✓	✓	✓	✓
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The best has just gotten better. Our new PowerCache™ is even faster and it fits into almost any Mac, from the LC and IIsi up to the IIci... all you have to do is change the adapter board. It's completely universal. The same card fits 7 different machines!

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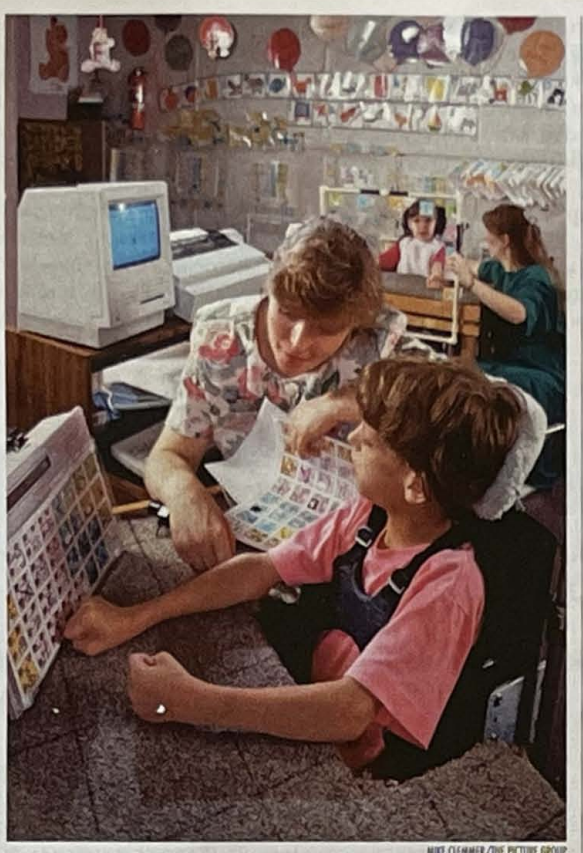
The United Cerebral Palsy Foundation is one of the many organizations that uses computers donated by the National Cristina Foundation. Shown here is Ellen Horton, a speech therapist for the Cerebral Palsy Foundation in Birmingham, Ala., who uses a donated Mac in her work with children.



MIKE CLEMMER/THE PICTURE GROUP

Old Macs can give new life

By Margie Wylie

Pelham Manor, N.Y. — "When you realize the power of microcomputers, you want to make that technology available to the people whose lives can be literally changed by it," said Yvette Marin.

That's why Marin helped start and today is the president of the National Cristina Foundation, a non-profit clearinghouse that matches thousands of donated, used computers with organizations lean from years of social-services cuts and hungry for technology.

In 35 states and several foreign countries, including Ireland, Poland and China, computers and peripherals donated through the NCF are used to teach history to students with learning disabilities and to help children express themselves through art. Some computers serve as the sole means by which people with cerebral palsy or other physically degenerative diseases communicate.

Increasingly, the donations are being used to educate disabled people who want to enter the work force. "To be technologically sensitized is to be employable in the 21st century," Marin said.

The Texas Rehabilitation Commission, one of many umbrella organizations served by the NCF, assigns equipment to physically disabled students at the University of Texas' campuses. For the students, the computers become their key to college survival and employment after graduation. "Even my able-bodied 20-year-old can't compete at college without a computer," said Jimmy Jackson, the commission's chief operating officer.

Although most of the computers NCF placed last year were IBM PCs and compatibles, "we'd love to have more Macs," Jackson said. "Our disabled clients need them very much."

To donate, contact the National Cristina Foundation at 42 Hillcrest Drive, Pelham Manor, N.Y. 10803. Phone (914) 738-7494 or (800) 274-7846; fax (914) 738-1571. □

Judge rejects attack on Apple copyright

San Francisco — A federal judge here rejected a key defense of Microsoft Corp. and Hewlett-Packard Co. in Apple's copyright suit against them.

Reinforcing a previous ruling, U.S. District Judge Vaughn Walker said Microsoft and HP cannot claim that the Mac window displays lack the originality needed for copyright protection.

The ruling appeared to strengthen Apple's hand in the look-and-feel case, although Microsoft said it has other defenses, including its 1985 agreement with Apple and other weaknesses in Apple's copyright.

"To prove copyright infringement, we need to prove two things: originality and substantial similarity. We're already halfway there; [Walker has] now said twice that we're original," said Apple spokesman Christopher Escher.

"This shows there are clearly going to be protectable rights in the user interface," said Susan Nycum, a Palo Alto, Calif., attorney specializing in computer issues.

Walker also called HP's claim that Apple's lawsuit is an attempt to create a monopoly "astounding" and a "distraction."□

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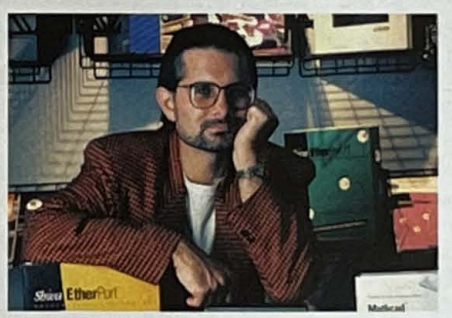

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MicroNet first with Sony optical

By Henry Norr

Irvine, Calif. — MicroNet Technology Inc. next week will become the first Mac vendor to announce a storage system based on a new Sony rewritable optical mechanism that can store up to 128 Mbytes on a 3.5-inch cartridge.

The drive, slated to go on sale in the fourth quarter for $1,795, will be introduced at next week's Macworld Expo in Boston, along with new high-speed disk-mirroring systems based on MicroNet's NuPort SCSI card. The company also will show a pair of recently introduced portable tape backup systems.

▸ **Optical drive.** The new MicroNet drive will be built around Sony's SMO-300 magneto-optical mechanism. The drive promises not only lower prices and a smaller footprint but also superior performance compared with 5.25-inch magneto-optical systems. Average seek time for the new system will be 40 milliseconds, according to Sony, twice as fast as the larger opticals and faster than hard drives were only a few years ago.

The MicroNet optical will come with one cartridge; additional cartridges will cost $69 each. The low per-megabyte media cost could help the new optical technology gain ground against the current leaders in removable mass storage, SyQuest Technology of Fremont, Calif., and Iomega Corp. of Roy, Utah.

▸ **Mirroring.** The company's new fault-tolerant storage systems incorporate two high-performance drives, one for primary storage and the other for real-time backup. In the event the primary drive fails, the system continues to operate by switching instantly to the functioning unit.

Because both drives are attached to the NuPort's high-speed SCSI port, the system will be up to three times faster than mirroring systems that put one drive on the slow Mac SCSI port, according to the company.

MicroNet's fault-tolerant systems start with a $6,790 package that includes the mirroring software, a NuPort card and a 312-Mbyte primary drive with a matching unit for backup. A 1.35-Gbyte system has a retail price of $13,290.

▸ **Portable tape drives.** MicroNet last month added two high-capacity tape drives to its Collegiate Pack line of portable storage systems. The Micro/Tape CPKT-600, priced at $1,645, incorporates a Teac streaming-tape mechanism with a capacity of 600 Mbytes per cartridge. The Micro/DAT CPKD-2000, with a suggested retail price of $3,295, uses an ARDAT Python 3.5-inch digital audio tape mechanism.

Each drive weighs about 3 pounds. They are bundled with a four-user pack of Retrospect Remote, network-backup software from Dantz Development Corp. of Berkeley, Calif.

MicroNet Technology Inc. is at 20 Mason, Irvine, Calif. 92718. Phone (714) 837-6033; fax (714) 837-1164. □

Lift-off for 32-bit Rocket: '040 accelerator runs 7.0

By Henry Norr

San Jose, Calif. — Radius Inc. last week boosted its Radius Rocket into System 7.0 orbit with a 32-bit-clean software update for the 68040-based accelerator.

The $3,495 NuBus card, which improves the performance of the Mac II, IIx, IIcx and IIci to Mac IIfx levels and beyond, now supports most aspects of the new operating system. The one exception, according to the company, is virtual memory.

"It's unclear as to whether we'll ever get that working," said Steve Becker, Radius product manager. He said Apple's virtual-memory code was written for the 68030's PMMU (paged memory management unit) and has not yet been optimized for the newer processor.

In collaboration with Newer Technologies of Wichita, Kan., Radius also announced that it will modify Rocket boards, on an individual basis, for customers who want to install Newer's 16-Mbyte composite memory modules on the card. The Mac IIci can access up to 128 Mbytes of RAM; even with a Rocket, other models remain subject to the memory limitations imposed by their "dirty" ROMs, but they can take advantage of additional RAM with Maxima 2.0 and Optima utilities from Connectix Corp. of Menlo Park, Calif.

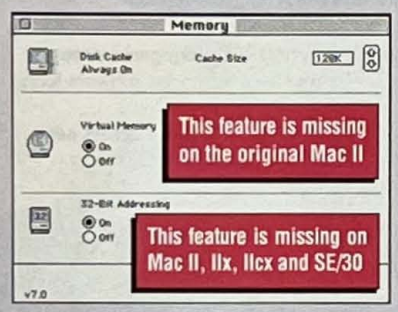
The Rocket still does not work with the Mac IIfx. Becker said Radius remains committed to supporting Apple's top-of-the-line '030-based model but declined to set a date.

The new Rocket software is available free from on-line services and many dealers; a package including a new manual is $25 from Radius and dealers.

Radius Inc. is at 1710 Fortune Drive, San Jose, Calif. 95131. Phone (408) 434-1010; fax (408) 434-9575. □

You could be missing the best parts of System 7.0

Make sure you get 32-bit addressing and virtual memory



The System 7.0 Memory Control Panel on a fully compatible Macintosh.

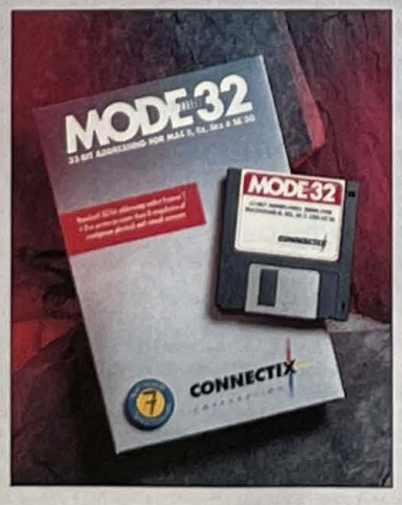
Your Mac II, IIx, IIcx or SE/30 lacks some important capabilities of the current generation of Macs. It won't run Apple's new standard 32-bit addressing mode which lets you use much more memory and run programs faster.

In fact, you'll discover that 32-bit addressing doesn't even appear in the System 7.0 Memory control panel.

That's why Connectix created a simple, affordable and unique software solution, MODE32,™ to let older Macs use 32-bit addressing.

MODE32 gives you access to more memory and boosts your productivity. With additional memory, applications can work faster and more programs can run concurrently.

MODE32 breaks through the eight megabyte memory barrier to access up to one full gigabyte of virtual memory, or as much physical RAM as you can put in your Macintosh.



You can get full use of 4MB and 8MB SIMMs or push virtual memory beyond Apple's 13 megabyte limit with MODE32.

It's ideal for memory-intensive applications such as graphics, desktop publishing, multimedia, CAD, large spreadsheets and image processing.

If you want the 32-bit addressing which is standard on the current generation of machines, you need MODE32.

Get virtual memory on your original Mac II

If you have an original Macintosh II, virtual memory is also missing from your Memory control panel.

Virtual memory is a standard System 7.0 feature that allows you to increase your Mac's system memory without having to buy and install additional SIMM memory.

Put the power of virtual memory to work for you with an MC73™ PMMU (Paged Memory Management Unit). It quickly drops into an existing socket designed specifically for this purpose.

Get virtual memory with the MC73 PMMU. This latest version (mask 73) of the Motorola 68851 PMMU is the only one known to be fully compatible with the original Macintosh II.

Be sure to get the full power of System 7.0

Complete Capability 7.0 Macintosh II, IIx, IIcx & SE/30

Don't miss these powerful System 7.0 features. Order MODE32 or MC73 today from your supplier, or call Connectix at (800) 950-5880 or (415) 324-0727.

Maximize your RAM investment

For Macs that have eight or more megabytes of RAM, MAXIMA™ is a simple, inexpensive way to get more out of your memory investment.

MAXIMA is the unique RAM enhancement utility that extends access to large amounts of RAM and creates a powerful RAM disk. Whether you use System 6, System 7, 32-bit addressing, or standard 24-bit mode, MAXIMA gives you more Mac productivity.

MAXIMA's protected, nonvolatile RAM disk converts part of your RAM into a high-speed storage device that is visible on your desktop. It works just like any other hard drive except hundreds of times faster. The contents survive system crashes, shutdowns, and restarts.

Use the RAM disk to reduce boot time, accelerate many routine operations, and speed up memory-intensive applications.

MAXIMA also extends 24-bit addressing capacity. Use up to 14 MB of RAM for applications in System 6. Do the same in System 7 whenever you turn off 32-bit addressing. It's ideal for applications and extensions that need large amounts of RAM but aren't "32-bit clean".

When you've gone to 8MB or beyond discover MAXIMA, the productivity tool that MacUser rates four and a half mice.

Call your supplier or Connectix at (800) 950-5880 or (415) 324-0727.

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Hydra delivers Mac card for PCs

By Raines Cohen

San Jose, Calif. — Users excited by the recent IBM-Apple alliance but unwilling to wait for tangible results can forge an alliance on their own desktops now. Hydra Systems Inc. last week shipped ANDOR ONE, an add-on card for IBM PCs and compatibles that runs Mac software.

In its current form, the $995 card requires Mac Plus ROMs and Apple's System 6 or 7.0, although Hydra claims both are "readily available." When it announced the card last year (see MacWEEK, Dec. 18, 1990), the company said it was developing its own ROM, based on the Xerox Star interface, that would run Mac software. Hydra has not yet said when it will deliver the ROM.

The full-length PC card will work on PC XT-architecture machines up to 486-based systems. ANDOR ONE requires a 3.5-inch floppy drive, 512 Kbytes of RAM, a Microsoft-compatible mouse or trackball, and an EGA or VGA display. A built-in speaker provides eight-bit audio output.

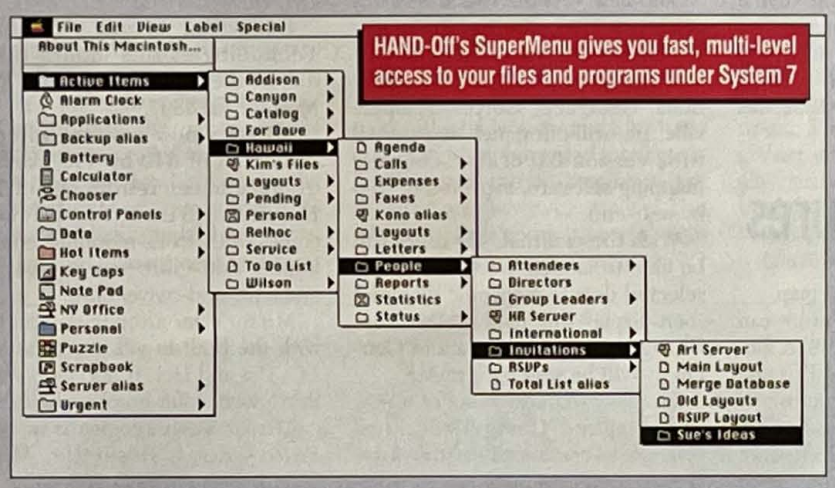
The card runs on a 16-MHz Motorola 68HC000 processor and offers direct memory access of up to 4 Mbytes of memory, which the user must install as SIMMs (single in-line memory modules). It includes an AppleTalk-compatible RS-422 connector for use over LocalTalk networks, allowing users to share printers and servers with Macs.

The card can read and write Mac single- and double-sided floppies but not high-density 1.4-Mbyte disks. In addition, it can use a portion of the PC's internal hard disk for file storage. Both 25- and 50-pin SCSI connectors are included for direct connection to Mac-dedicated internal and external drives. The file-translation utility Word for Word from Mastersoft Inc. of Scottsdale, Ariz., is included.

Hydra Systems Inc. is at 1340 S. Saratoga-Sunnyvale Road, Suite 106, San Jose, Calif. 95129. Phone (408) 253-5800; fax (408) 253-1113. □

See us at Macworld Boston
World Trade Center - booth 5770

For fast, easy file access, get new HAND-Off II



Get more done in less time with HAND-Off,™ the collection of productivity tools that make accessing files a snap. As MacWEEK said, "It's so good that Apple should have put it in their system software."

Here's how the new System 7.0 savvy version can make your Macintosh even more productive.

Locate and launch files fast using the Apple menu

Click open any document, alias or application directly from the Apple menu. Speed through your control panels with a mouse stroke. HAND-Off II's new SuperMenu™ turns the System 7.0 Apple menu into a multi-level hierarchy for viewing, launching and opening both folders and files.

Pop-up menus open many files simultaneously

Organize files and applications the way you work. With the HAND-Off II pop-up launch menu you can easily open any file or group of files. This custom pop-up menu is ideal for opening all of the letters, charts, spreadsheets and files associated with a project.

Finder enhancements for increased productivity

You can create custom settings for any application, so whatever is running, your Mac will automatically switch to the environment you prefer. HAND-Off II lets you individually set the color depth and sound level for any application. It's all automatic.

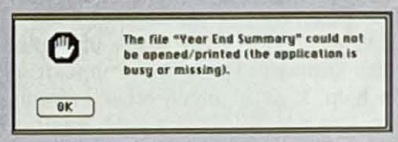
Run your Mac in full color when you use your favorite graphics programs. Then HAND-Off II will transparently change to the faster black and white mode when you switch to a word processing or spreadsheet program.

Moving through a clutter of overlapping windows can be confusing. Your desktop will be easier to use when you pair HAND-Off II's new Autohide feature with System 7.0. Autohide lets you automatically hide all windows except the ones that your current application is using. The result is a cleaner, more productive desktop.

Automatic substitution for your missing applications

Say goodbye forever to the annoying "Application Not Found" message. If the program you need is missing, HAND-Off II's application substitution will automatically use an alternate.

Now, whenever you click on a file, you can automatically open a compatible alternate application.



With HAND-Off II's "on-the-fly" application substitition this error message is obsolete.

You can even pre-assign application substitutions. HAND-Off II lets you double click on any file–even one from a DOS machine–and automatically open it using a compatible alternate program.

Get HAND-Off II, the productivity tool that MacUser rates five mice. Call your software supplier or Connectix direct at (800) 950-5880 or (415) 324-0727.

"This utility is definitely in a league with Suitcase II–and it's indispensible."
– MacUser, February 1991

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TI unveils RISC printers with PostScript Level 2

By Neil McManus

Austin, Texas — Texas Instruments Inc. hopes to shake up the printer market this week by introducing two new relatively inexpensive RISC-based PostScript Level 2 laser printers.

The AppleTalk version of the microLaser Turbo, a 9-page-per-minute printer, will retail for $2,349. The 16-ppm microLaser Turbo XL with AppleTalk will list for $3,749. Both 300-dpi printers will ship in September.

The new TI printers come with 2.5 Mbytes of RAM, expandable to 10.5 Mbytes, and 35 Type 1 fonts. Both printers are built around two processors: a 16-MHz Weitek PXL 8220 RISC (reduced instruction set computing) chip on the PostScript processor board and a Motorola 68000 chip on the main controller board.

The printers have a 250-sheet paper tray that can handle a variety of paper and transparency sizes, including letter, legal, A4 and B5.

A Centronics parallel interface is standard on both models, with other interfaces available as options. A SCSI interface lists for $249.

The printers offer automatic switching between ports and between PostScript Level 2 and HP PCL 4 emulation.

Texas Instruments Inc. is at 12501 Research Blvd., Austin, Texas 78769. Phone (512) 250-7111 or (800) 527-3500; fax (512) 250-6926. □

Lower price for Adobe PS

Texas Instruments Inc. this week will slash the microLaser PS17 with AppleTalk to $1,499, setting a new low price point for Adobe PostScript laser printers in the Mac market.

In addition to the PS17's $645 price cut, TI's microLaser PS35 with AppleTalk will be cut to $1,849, a $795 drop. Both 300-dpi printers come with 1.5 Mbytes of RAM and engine speeds of 6 pages per minute. The microLaser PS17 comes with 17 Type 1 fonts, while the PS35 has 35.

TI also will drop $1,245 off the price of the microLaser XL PS17 with AppleTalk, making it $2,899.

It also will cut the list price of the microLaser XL PS35 with AppleTalk to $3,249, a reduction of $1,395. The XL printers are similar to the lower-priced microLasers but offer engine speeds of 16 ppm.

SuperMac soars with Thunder line

Boards display color at 21 inches

By Neil McManus

Sunnyvale, Calif. — SuperMac Technology this week will unveil two new accelerated video boards for large-screen color displays.

SuperMac's $1,899 Thunder/8 card delivers eight-bit color, while the $4,999 Thunder/24 offers 24-bit color. Both NuBus boards, which will ship in September, work on color displays as large as 21 inches.

The Thunder boards accelerate QuickDraw commands by as much as 2,300 percent by using a new proprietary application-specific integrated circuit (ASIC).

The new cards contain SuperMac's proprietary OpenSlot connector, which allows application-specific accelerators (such as for QuickTime) to be plugged into the card.

The Thunder cards also have SIMM (single in-line memory module) sockets for up to 8 Mbytes of GWorld (graphics world) display memory. Apple's GWorld QuickDraw routines create images off-screen and quickly transfer them to the display.

SuperMac is offering a 4-Mbyte GWorld SIMM kit for $749 and an 8-Mbyte kit for $1,449.

SuperMac's new Thunder/8 and Thunder/24 video boards accelerate QuickDraw commands up to 2,300 percent.

SuperMac's SuperMatch system software is included with the boards. SuperMatch ensures that colors displayed on a monitor closely match the colors of output devices that comply with Tektronix Inc.'s TekColor Color Management System (CMS) specifications.

The SuperMac cards have hardware pan and zoom and come with a system extension for screen capture, screen saving and creating virtual screens as large as 8 feet square.

SuperMac Technology is at 485 Potrero Ave., Sunnyvale, Calif. 94086. Phone (408) 245-2202; fax (408) 735-7250. □

New 4D first major application shipping with core events support

Customizer Plus added to Version 2.2

By Andrew Gore

Cupertino, Calif. — ACIUS Inc. this month started shipping 4th Dimension Version 2.2, the first major application to support core Apple events.

Via the core events, other applications will be able to control the ACIUS engine and work with information in 4D databases.

The new release also supports most System 7.0 features, such as 32-bit addressing, virtual memory, TrueType and balloon help, but not publish and subscribe.

The new version, which remains priced at $795, also has the ability to run 4D externals that send custom Apple events to other applications. GeoQuery Corp. of Naperville, Ill., will offer such an external with Version 3.0 of its GeoQuery mapping software, expected to ship by year-end.

With the external, 4D users will be able to launch GeoQuery, send selected data to a specific map and then display that data on the map. Changes made to the data in GeoQuery will be sent back to 4D.

The new 4D also includes a new utility called Customizer Plus, which lets users localize the database to their own language. In addition, it lets users create defaults for windows, key commands, memory, fonts, color palettes and buttons. The utility also can be used to restrict data-file access to specific databases.

4D now requires less disk space for data files with multiple indexes, the company said.

Users can upgrade for $50 by contacting ACIUS by Sept. 30.

ACIUS Inc. is at 10351 Bubb Road, Cupertino, Calif. 95014. Phone (408) 252-4444; fax (408) 252-0831. □

Mirror has $397 color monitor

Roseville, Minn. — Mirror Technologies this month introduced the Mirror 14-inch Color Monitor for $397.

Mirror's new monitor offers a resolution of 640 by 480 pixels at 67 dpi, a screen refresh rate of 66.7 Hz and a .31mm dot pitch. It comes with front-mounted control knobs, anti-glare screen coating, and a tilt-and-swivel base.

Mirror's monitor is compatible with the built-in video on the Mac LC, IIsi and IIci. It also works with third-party color graphics boards.

Mirror Technologies is at 2644 Patton Road, Roseville, Minn. 55113. Phone (612) 633-4450; fax (612) 633-3136. □

GIS software combines mapping, database features

By Raines Cohen

San Jose, Calif. — Strategic Mapping Inc. next week will announce its first Geographical Information System (GIS) for the Mac.

Due in September for $795, Atlas Pro combines aspects of presentation graphics and database software. Users can create text reports, data-driven maps and charts without having to switch between mapping and database programs. A starter kit of data, boundary and ZIP-code files is included. Features include:

- **Street maps.** The program can map out every street in the country, match any address to its latitude and longitude, and attach user data to geographic points.

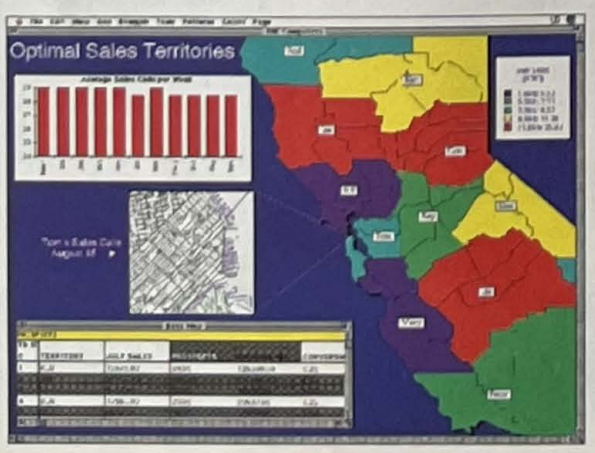
The company separately offers street data from Etak Inc. of Menlo Park, Calif., and the U.S. Census Bureau's TIGER (topologically integrated geographically encoded reference) files and DIME (dual independent map encoding) files. Files are available on floppy disk and custom CD-ROMs for $250 per county.

- **Manipulation.** Changes made on the map are updated immediately in the data tables and charts and vice versa. Attributes of graphs, maps and text can be changed by clicking on palettes and menus, rather than using a series of nested dialog boxes.
- **SQL.** Atlas Pro's built-in spreadsheet can import external data, match up geographic variables such as addresses or ZIP codes, and perform SQL queries to find records by geography or attributes. Users also can perform point-and-click selection.
- **System 7.0.** The program, which can publish and subscribe to data and graphics, also supports TrueType and balloon help. It can import Data Access Language (DAL) query documents.

Atlas Pro is the first mapping program to support core Apple events. As a result, applications that can send Apple events can use the program as an engine, even across a network, to create maps and look up data. It also supports custom events that render coordinates and dimensions into specific areas on a map.

Users of MapMaker software can upgrade to Atlas Pro for $249. A file-compatible version for IBM PCs and compatibles shipped this month.

Strategic Mapping Inc. is at 4030 Moorpark Ave., Suite 250, San Jose, Calif. 95117. Phone (408) 985-7400; fax (408) 985-0859. □



Strategic Mapping's new Atlas Pro provides live links between data and graphics, so any change or selection made on the map is immediately reflected in the table and vice versa.

Pixar hopes to win with Showplace 3-D app

By Connie Guglielmo

Richmond, Calif. — After a few false starts, Showplace, Pixar's 3-D picture-composition software, is finally off and running.

At a press briefing last week featuring Steve Jobs, a principal investor in Pixar, the company said it is now shipping the $995 program. Pixar also announced it is at work on a technology called Iceman (Image Computing Environment) that it hopes will become an industry standard for image manipulation, Jobs said.

Showplace lets users assemble objects into pictures in much the same way page-layout programs let users assemble elements onto a page. It was slated to ship in February, but Pixar later said a software spinoff would market the program. Plans for the spinoff fell through, however (see MacWEEK, March 12).

Jobs and Ed Catmull, Pixar co-founder, said that Showplace has been repackaged as a front end to MacRenderMan, photo-realistic 3-D rendering technology, which was used to create Pixar's award-winning animations. MacRenderMan, which Pixar has promoted as an industry standard for photo realism, also has been used by filmmakers to create animated creatures in movies such as "Terminator 2."

Pixar's Showplace lets users compose photo-realistic 3-D images using MacRenderMan rendering technology.

The technology also helped win the company a three-picture deal with Walt Disney Co. of Burbank, Calif., to create feature-length animated films.

Although it has been available as a $795 application from Pixar, MacRenderMan now will only be available bundled with Showplace. The company also will offer Showplace and MacRenderMan on CD-ROM starting next month for $695.

Two companies announced clip libraries of surface textures for use with Showplace. The VALIS Group, a start-up company here that was founded by former Pixar employees, is shipping the $495 VG Shaders + VG Looks. Acuris of Fremont, Calif., announced three new ClipModels libraries, which are $395 each.

Pixar is at 1001 W. Cutting Blvd., Richmond, Calif. 94804. Phone (415) 236-4000; fax (415) 236-0388. □

For the Record

The artwork for the July 16 article on Ray Dream Inc.'s JAG utility (Page 32) was created by Carl W. Kistler and Dennis DeSantis using Electronic Arts' Studio/8.

Claris takes integration to higher level

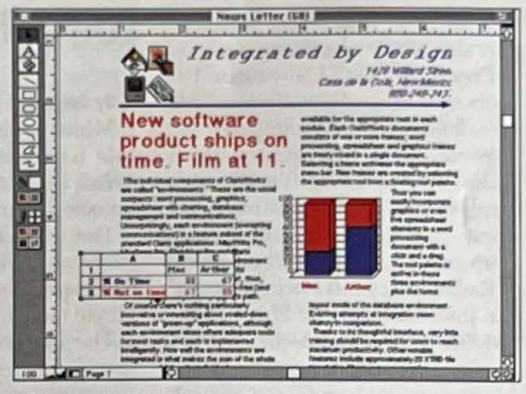
ClarisWorks set to ship by year-end

By Dale Coleman

Claris Corp. is betting that ClarisWorks, the integrated-software package it hopes to ship by year-end, will prove attractive to purchasers dissatisfied with Microsoft Works and Symantec Corp.'s new GreatWorks (see review, Page 41), which began shipping three weeks ago.

The biggest problem with integrated software has been the relatively low level of true integration among a program's individual modules. While GreatWorks offers a much higher level of integration than Microsoft Corp.'s aging offering, the beta version of ClarisWorks shown to MacWEEK indicates that Claris is aiming at still greater integration.

The individual components of ClarisWorks are called environments. These cover the usual suspects in the integrated-software arena: word processing, graphics, spreadsheet, charting, database management and communications. Not surprisingly, the features available in each environment (with the exception of the communications module) are a subset of those in standard Claris applications (MacDraw Pro, FileMaker Pro, and the upcoming Claris Resolve and MacWrite Pro). Each environment's interface closely resembles that of its application-grade Claris counterpart. According to Claris, this should make it relatively painless to upgrade to the real thing when you outgrow ClarisWorks or a part thereof.



This newsletter consists of spreadsheet, chart, graphics and word processing frames created and edited in this single graphical document. Text frames can be linked to overcome ClarisWorks' inability to wrap text around objects in word processing documents.

Of course, there's nothing particularly innovative or interesting about scaled-down versions of grown-up applications, although each environment offers adequate tools for most tasks and is implemented intelligently. How well the environments are integrated, however, makes the whole package more powerful than the sum of its individual parts.

Step-by-step integration. There are several steps to full integration, and apparently Mac software is going to take each step individually. The first step is simply to paste discrete applications together with a relatively low level of common functionality, as Microsoft Works does. The next step includes a greater degree of common functionality, such as common text-manipulation tools in each module; GreatWorks achieves this step.

ClarisWorks aims for the next level, in which task-specific tools are available for the appropriate task in each module.

Each ClarisWorks document consists of one or more frames; word processing, spreadsheet and graphics frames mix freely in a single document. Selecting a frame activates the appropriate menu bar. New frames are created by selecting the appropriate tool from a floating palette. So you can easily incorporate graphics or live spreadsheet elements in a word processing document with a simple click and drag. The tool palette is active in these three environments, as well as the forms-layout mode of the database environment. Current attempts at integration seem clumsy in comparison.

Thanks to its thoughtful interface, very little training should be required for users to reach maximum productivity with ClarisWorks. Other notable features include about 20 XTND file-translation filters, a macro recorder, footnotes, linked text frames, 3-D bar charts, and flexible object scaling.

Missed steps. For all its evolutionary features, ClarisWorks has a few omissions that we found surprising. There are no hot links between documents. If you incorporate a part of a worksheet into a word processing document, then change the original worksheet, the word processing document is not updated.

Based on the steady barrage of propaganda from Claris during the past few months, we expected ClarisWorks to be the most System 7-savvy of all System 7-savvy applications. Such is not the case; ClarisWorks lacks support for the flashier System 7.0 features, such as publish and subscribe, and even for Apple events. Their absence strikes a discordant note in what otherwise seems to be a well-conceived effort.

Claris will aim ClarisWorks at the traditional integrated market, composed primarily of managers and first-time users, small and medium businesses, Mac Portable and laptop users, and the education market. Its projected $295 retail price, overall utility and relatively modest disk requirements make it an attractive choice for the intended audience.

Other contenders. Also on the integrated horizon and scheduled for release later this year is BeagleWorks from Beagle Bros. of San Diego. According to the company, BeagleWorks will offer a level of integration and functionality similar to that of ClarisWorks, but it also will feature live hot links between documents, support for publish and subscribe, and a color paint module.

Claris Corp. is at 5201 Patrick Henry Drive, Santa Clara, Calif. 95052. Phone (408) 727-8227. □

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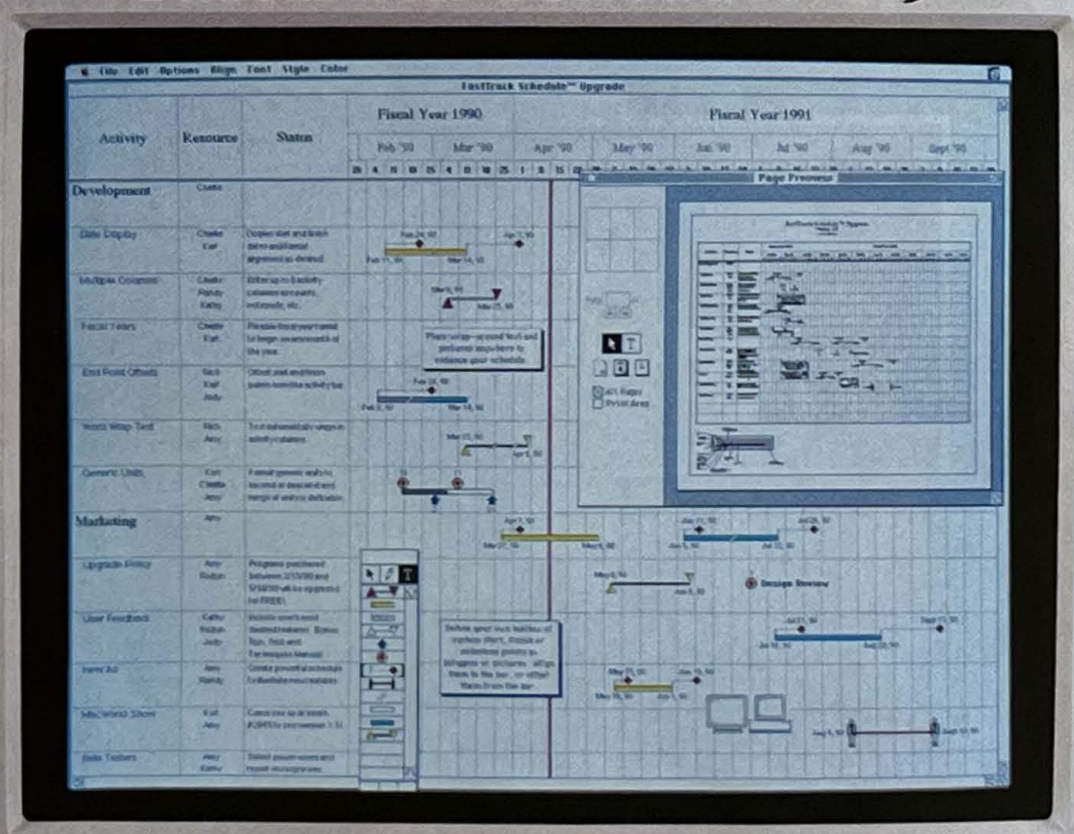

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Radius displays multi-res, 8-bit color card

Color calibrator updated for 7.0

By Neil McManus

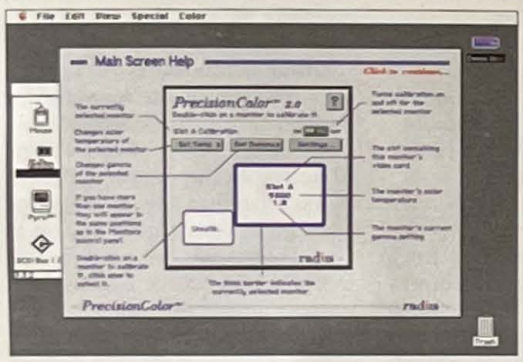
San Jose, Calif. — Radius Inc. last week introduced a new multiple-resolution eight-bit color-graphics card and a System 7-compatible upgrade to the PrecisionColor Calibrator.

▶ **PrecisionColor 8.** Available now for $795, this NuBus board delivers eight-bit color to monitor sizes up to 21 inches.

The board offers 256 colors or levels of gray, as well as resolutions ranging from 640 by 480 pixels at 72 dpi on a 13-inch display to 1,152 by 882 pixels at 78 dpi on a 21-inch display. When used with the $4,495 Radius Color Display 21, the card lets users switch between 72 and 78 dpi on the fly for either actual-size or two-page viewing.

Mac IIsi users who purchase PrecisionColor 8 will receive a free NuBus adapter with a math coprocessor socket.

▶ **PrecisionColor Calibrator 2.0.** This software update to Radius' $695 stand-alone display calibration device offers more color control, increased compatibility with third-party displays and System 7.0 support.



Calibrator 2.0 comes with help screens that explain the finer points of adjusting a monitor's color temperature and gamma.

The calibrator lets users adjust display attributes to match the color characteristics of their input and output devices. With the new version, users can set exact color temperature and gamma settings instead of being restricted to preset options. The white point of a display also can be manipulated.

PrecisionColor Calibrator 1.0 users can upgrade to Version 2.0 for a shipping and handling fee.

Version 2.0 is compatible with all Radius color displays. It works with displays and graphics cards from Apple, E-Machines Inc., RasterOps Corp. and SuperMac Technology.

Radius is at 1710 Fortune Drive, San Jose, Calif. 95131. Phone (408) 434-1010; fax (408) 434-0770. □

Mirror portable drives deliver compact size, price for Mac line

By Dartanyan L. Brown

Minneapolis — Two new portable hard drives announced this month by Mirror Technologies Inc. are compact in both size and price.

The new drives measure 4.6 by 7.8 by 2 inches. A 40-Mbyte version is priced at $297, while an 80-Mbyte model is $397.

The larger drive, which weighs only 2 pounds, incorporates a low-profile 3.5-inch Maxtor mechanism with an average access time of 17 milliseconds. The 40-Mbyte drive, weighing 2.4 pounds, has a Sony half-height 3.5-inch mechanism with an average access time of 29 milliseconds. MTBF (mean time between failure) for the Maxtor drive is rated at 150,000 hours; for the Sony, MTBF is 25,000 hours.

The drives ship with a power cable that connects to the floppy port of the SE, SE/30, IIsi, IIcx and IIci. For the Mac Plus and Classic, a $49 power adapter is required because of what Mirror describes as insufficient power at the floppy drive port. The II, IIx and IIfx also require the adapter because they have no floppy port.

The drives are covered by a 30-day money-back guarantee and a two-year warranty on parts and labor. They have external SCSI address selectors and ship with a SCSI cable and external terminator.

Mirror Technologies Inc. is at 2644 Patton Road, Roseville, Minn. 55113. Phone (612) 633-4450; fax (612) 633-3136. □

Microsoft cuts price of Works

By Andrew Gore

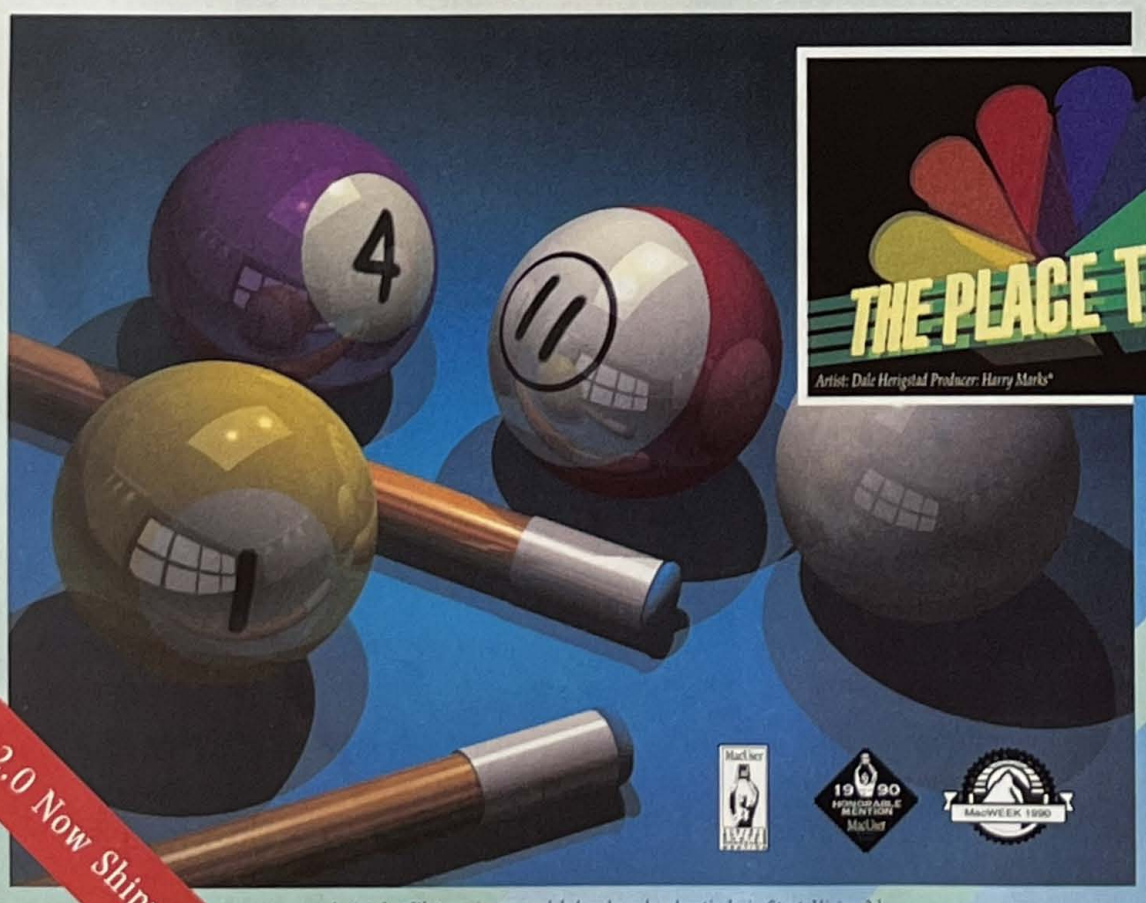
Redmond, Wash. — Microsoft Corp. earlier this month cut the price of its venerable integrated package, Microsoft Works 2.0, from $295 to $249.

Microsoft's price cut comes at a time when activity in the Mac integrated-software market has suddenly become heated. GreatWorks, a $299 package from Symantec Corp. (see review, Page 41), was introduced last month. This week Claris Corp. will introduce ClarisWorks for $299 (see story, Page 7). Next week, Beagle Bros. Inc. will introduce its $299 BeagleWorks at the Macworld Expo (see MacWEEK, July 16).

Microsoft said it cut Works' price to make it more attractive to Mac Classic and LC buyers. Sources familiar with the product, however, said Microsoft was motivated more by the program's new competitors and because the company may debut Works 3.0, the first major update to Works in three years, at the expo.

Microsoft Corp. is at 1 Microsoft Way, Redmond, Wash. 98052-6399. Phone (206) 882-8080; fax (206) 883-8101. □

PHOTOREALISM



2.0 Now Shipping

Artist: Jon Watson; image modeled and rendered entirely in StrataVision 3d.

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*StrataVision 3d created the NBC image for animation storyboards. StrataVision and StrataVision 3d are trademarks of Strata, Inc.

La Cie puts 40MB in small PocketDrive

By Henry Norr

Tualatin, Ore. — La Cie Ltd. next week expects to unveil what it calls "the smallest mass storage device yet" for the Mac, a palm-size 40-Mbyte external drive weighing just 10 ounces.

Called the PocketDrive, the portable unit will be shown at next week's Macworld Expo in Boston and is slated to ship in September at an introductory price of $449.

Its 2.5-inch drive, with an average seek time of 19 milliseconds, is manufactured by Quantum Corp., parent company of La Cie's owner, Plus Development Corp. The drive draws power from one of the Mac's Apple Desktop Bus ports; for the Mac Plus, which has no ADB, La Cie plans an adapter that will get power from the floppy drive port.

Aimed particularly at users who want to carry their data and programs between two offices or home and work, the PocketDrive will ship with several special adapters designed to take the hassle out of connecting and disconnecting:

▸ **PocketDocks.** The package will include two custom cables, called PocketDocks, that can be left connected to a Mac, making it possible to connect or remove the drive without having to reach around to the back of the Mac. The docks each have a 25-pin SCSI connector for daisychaining, an external termination switch and a rotary switch for setting the SCSI ID number.

▸ **T connector.** Also included will be a SCSI T connector for use when the drive is taken to a Mac without a PocketDock. The lightweight adapter has termination and SCSI ID switches.

The drive is covered by a two-year warranty on parts and labor. It will ship with Silverlining, La Cie's $150 hard disk utility, and more than 5 Mbytes of public-domain software.

The PocketDrive will directly challenge the Clipper, a miniature drive marketed by Jasmine Technologies Inc. of San Francisco and its affiliate, iDS Systems Inc. of Sunnyvale, Calif. The Clipper plugs directly into the SCSI port on the back of the Mac and lacks the PocketDrive's docking cables.

La Cie Ltd. is at 19552 S.W. 90th Court, Tualatin, Ore. 97062. Phone (503) 691-0771; fax (503) 691-5590. □

Macreations delivers updated Tycho

By James Cury

Boulder, Colo. — Macreations Publishing Corp. this month shipped a new version of Tycho Table Maker, software that converts information from a spreadsheet or database into tables for use in page layout or presentation materials.

Available for $149.95, Version 1.5 now offers fractional character spacing, find and replace, user-defined text styles, and a new Type 1 Dingbat font. It is System 7-compatible.

"I use Tycho Table Maker to create charts comparing competitors' prices for every destination our customers travel to, depending on different seasons and departure points," said Stanley Lo, manager at Green Banker, a real-estate company that also owns several travel companies.

Registered users can purchase upgrades for $24.95, plus shipping and handling, and a completely revised manual for $15.

Macreations Publishing Corp. is at 1150 Hancock Drive, Boulder, Colo. 80303. Phone (303) 447-3705. □

Maxima 2.0 gives System 7.0 users new ways to put their RAM to work

By Henry Norr

Menlo Park, Calif. — Connectix Corp.'s Maxima was an acknowledged breakthrough — the only way for Mac systems to access more than 8 Mbytes of memory — when it was released a year ago. But some users expected it to fade away with the advent of System 7.0 and 32-bit memory addressing.

Not so, says Connectix, which this month delivered Version 2.0 of the $129 utility, an upgrade available free to registered users.

Intended primarily for Macs equipped with 4-, 8- or 16-Mbyte SIMMs (single in-line memory modules), the program gives users two ways to take advantage of their installed RAM:

▸ **Application memory.** The new version lets Macs access up to 14 Mbytes of RAM as main memory in System 7.0's 24-bit mode, as well as under System 6. Without Maxima, users who need to run applications that don't work under the new system or in 32-bit mode are limited to 8 Mbytes of real memory.

Under MultiFinder in System 6 or in System 7.0's 24-bit mode, however, no one application can use more than 8 Mbytes, even if Maxima has boosted total available memory. Applications launched under the Finder in System 6 can use all free memory, subject to some limitations.

▸ **RAM disk.** Under System 6 or in either of System 7.0's memory-addressing modes, Maxima 2.0 can turn any memory not allocated to the system into a RAM disk. The program can be set to create the electronic volume automatically at start-up, loading all files stored in a designated folder; if a system and Finder are loaded, it becomes the start-up disk.

The RAM disk survives restarts and many system errors, and it can be configured so its contents are saved automatically to disk at shutdown.

Maxima 2.0 works with any 68030-based Mac, as well as with original Mac II systems fitted with an add-on PMMU (paged memory management unit).

Connectix is at 125 Constitution Drive, Menlo Park, Calif. 94025. Phone (415) 324-0727 or (800) 950-5880; fax (415) 324-2958. □

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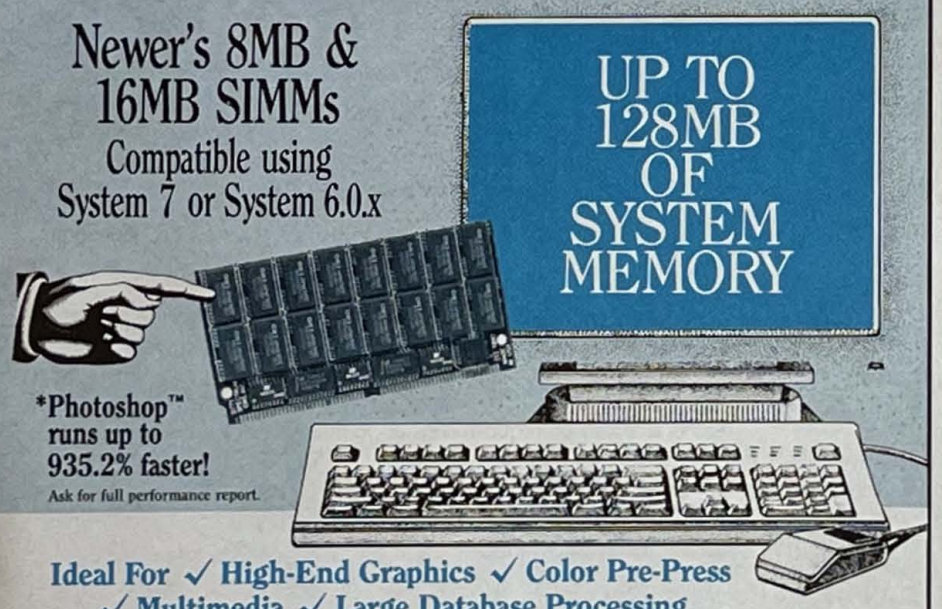

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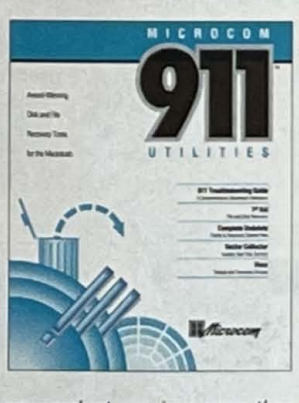

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Great Gantt! integrated with 4D

Varcon also releases Micro Planner reader

By Rochelle Garner

San Diego — Varcon Systems Inc. this month began shipping a new program that lets developers add Gantt charting to database applications built with ACIUS Inc.'s 4th Dimension.

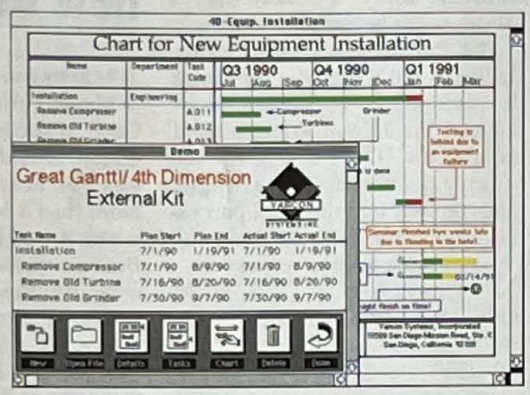
Available now for $295, Varcon's Great Gantt! 4D External Kit includes a copy of the company's Great Gantt! program and a set of 4D externals. Under System 7.0, or 6 with MultiFinder, users running applications with the externals installed will be able to transfer schedule data directly to the charting program. Data can be edited and manipulated within the Gantt chart and returned to 4D. In addition, users can specify the fields they need within 4D for presentation within Great Gantt!.

Data can include planned and actual start dates, end dates, costs, progress dates, dependency information and milestones. In addition, users can make on-screen notations in Great Gantt!; notes remain attached to their associated tasks, even when tasks are moved.

In a separate announcement, Varcon said it has released Great Gantt! Version 1.4. The $195 program automatically reads files created in MicroPlanning International Inc.'s Micro Planner Version 6 and Micro Planner X-Pert. Current owners can upgrade to Version 1.4 for $25.

Until Sept. 1, developers can purchase the Great Gantt! 4D External Kit from Varcon for $150; external procedures are $99. After that time, external procedures will cost $195.

Varcon Systems Inc. is at 10509 San Diego Mission Road, Suite K, San Diego, Calif. 92108. Phone (619) 563-6700; fax (619) 563-1986. □



Great Gantt! 4D External Kit lets programmers create live data links between ACIUS' 4th Dimension and Varcon's Great Gantt!.

New Dicer simulates floating objects

Visualization tool gets solid-fill option

By Raines Cohen

Champaign, Ill. — Spyglass Inc. last week shipped a new version of Spyglass Dicer, its 3-D and 4-D data-visualization application.

Version 1.1 of Dicer, which lets users view how data changes over time, remains priced at $495.

The program displays 3-D data sets as a freely rotatable cube (see MacWEEK, Aug. 7, 1990). Users can slice away portions of the cube to reveal the interior of the solid and inspect the data set by observing color variations in the cube. By rendering only the visible edges of the data, Dicer can operate much faster than a full 3-D rendering application.

The new version now supports animation, data reformatting, additional data-saving options and a solid-fill feature.

Solid fill renders all the data-set voxels (3-D pixels) to simulate the appearance of a floating object. It does this by making voxels representing specific values transparent, causing the remaining voxels to look as if they are floating in space.

Dicer offers three kinds of animation:

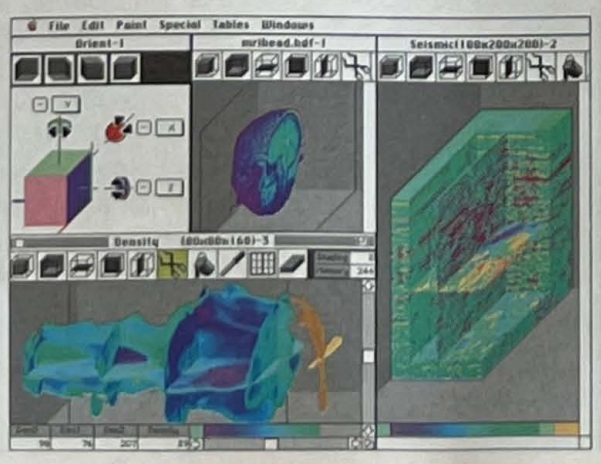
- **Slice animation** lets users select any two slices in a data cube. The program generates and displays a sequence of all the slices in between, with each slice filling the window to simulate the user moving through the data set.
- **Space animation** interpolates between two slices or data cubes by calculating in-between frames and displaying them from a user-selected vantage point.
- **Time animation** shows a series of data sets collected over time, displaying them as one dynamic process.

Any of the animation sequences can be saved as Hierarchical Data Format, PICT or PICS files. A PICS player utility is included.

Users now can save settings and rename dimensions.

Educational and volume discounts are available. Registered users can upgrade for free.

Spyglass Inc. is at 701 Devonshire Drive, C-17, Champaign, Ill. 61820. Phone (217) 355-1665; fax (217) 355-8925. □



Spyglass Dicer 1.1 includes the ability to turn on all voxels (3-D pixels) so key data appears to float in space.

On Location due for 7.0 update

By Raines Cohen

Cambridge, Mass. — ON Technology Inc. last week announced Version 2.0 of On Location, its popular file-searching desk accessory.

The new version, due in September, offers a new interface, runs faster and adds new features in several areas, including:

- **Indexing.** Version 2.0 will be able to index volumes in the background under System 7.0, a capability the current version lacks. The new version also will let users set the length of idle time the program waits before starting to index. In addition, users will be able to index numbers in files, not just words.
- **Searching.** While previous versions perform only Boolean AND-type searches, the new version also will do OR searches. The file list can be copied or printed, and users will be able to select disks and files by typing.

The program's interface is more Mac-like than before, according to beta testers. Users can disable the Claris XTND filters the program normally uses to view files and select the default font for text views.

On Location's price remains $129.95. Registered users can upgrade for $20 (plus $5 postage) or for free if they bought the original after July 8. The program has a one-year money-back guarantee.

ON Technology Inc. is at 155 Second St., Cambridge, Mass. 02141. Phone (617) 876-0900; fax (617) 876-0391. □

News BRIEFS

Baseline Publishing doing its part for the environment

Memphis, Tenn. — Baseline Publishing Inc. will be attending Macworld Expo next week in environmentally aware style.

The company, which already follows such earth-friendly steps as using recycled packaging for its documentation, will donate $1 to the Macworld Earth Conservancy for every product it sells at the expo.

"We hope we can raise some awareness. The computer industry is one of the worst offenders of using too much packaging," said David Gilliland, Baseline's CEO.

Gilliland said the company is hoping to raise between $10,000 and $20,000 for the conservancy, a group that promotes recycling in the computer industry and reforestation.

Baseline Publishing Inc. is at 1770 Moriah Woods Blvd., Suite 14, Memphis, Tenn. 38117. Phone (901) 682-9676; fax (901) 682-9691.

Apex math coprocessor now offers choice of speeds

Austin, Texas — Second Wave Inc. next month will ship a multi-speed version of its Apex 68882 floating-point math coprocessor card for the Mac LC.

The new Apex card will ship in 16-, 25-, 33-, 40- and 50-MHz configurations. Prices range from $149 to $300. The original Apex, announced this spring (see MacWEEK, April 23), was priced at $249 and ran at a clock speed of 16 MHz. The company dropped the price to $149 last month.

Second Wave Inc. is at 9430 Research Blvd., Echelon II, Suite 260, Austin, Texas 78759. Phone (512) 343-9661; fax (512) 343-9663.

Gene Construction Kit three times faster

W. Lebanon, N.H. — Textco Inc. last week shipped an upgrade to its molecular-modeling software, Gene Construction Kit.

GCK lets users analyze and manipulate strings of genetic material by cutting and pasting graphical representations of DNA fragments (see MacWEEK, March 5). Version 1.07 of the $895 program, free to registered users on request, runs up to three times faster than previous versions, according to the company.

Textco Inc. is at 27 Gilson Road, W. Lebanon, N.H. 03784. Phone and fax (603) 643-1471.

ICP catalogs Mac software on CD-ROM database

Indianapolis — International Computer Programs Inc. last month released the ICP Apple Macintosh Software Product database. The CD-ROM contains descriptions of more than 1,700 Mac software programs.

Aimed at potential software buyers, the $29.95 CD-ROM also offers hands-on software demonstrations and product presentations. ICP will offer updates every three months for $20 each.

The CD-ROM requires an Apple CD-ROM drive compatible with the Mac's hierarchical file system and HyperCard 2.0 or higher.

International Computer Programs Inc. is at 8900 Keystone Crossing, Suite 1100, Indianapolis, Ind. 46240-2183. Phone (317) 844-7461; fax (317) 574-0571.

Chena 'work processor' puts spin on data

Fair Witness outlines ideas, tracks projects

By Dartanyan L. Brown and Henry Norr

Allentown, Pa. — Chena Software Inc. had to invent a category to describe Fair Witness, an application that lets users outline ideas, tabulate preferences, track projects and design custom "information charts" that combine a variety of data types.

The company dubbed its $495 program, which began shipping last month, a "work processor," because it is designed to let managers keep all the information they need for a job in a single document, without switching among different applications.

▸ **Outlining.** The program opens in an outline view, where users can enter and organize their ideas. Along with standard features such as expanding, contracting and rearranging items, Fair Witness lets users group entries into categories by dragging them to on-screen "category boxes" with custom labels or icons.

▸ **Information charts.** By clicking on a palette or menu item, users can turn the outline into an information chart, a grid of cells that can hold multiline text, numbers, icons or pictures. Custom pop-up menus, listing frequently entered names, dates or other items, reduce typing and ensure consistency. Rows and columns can be resized, rearranged and hidden. Mathematical functions include sum, variance, standard deviation, minimum, maximum, and average and weighted average.

▸ **Time charts.** Fair Witness' Gantt-style time-chart view lets users select intervals, colors, patterns and markers, as well as starting and ending points. Schedule changes can be made by dragging markers and bars; dates in other views are updated automatically.

▸ **Freeform.** The program also provides a "freeform" mode, in which ideas can be placed anywhere on an "electronic whiteboard" and linked with customized lines and arrows to create organizational or flow charts.

▸ **Ratings.** Fair Witness offers several special options for ranking alternatives and tabulating preferences. Words or numbers can be used for ratings, and results can be displayed as pie or bar charts.

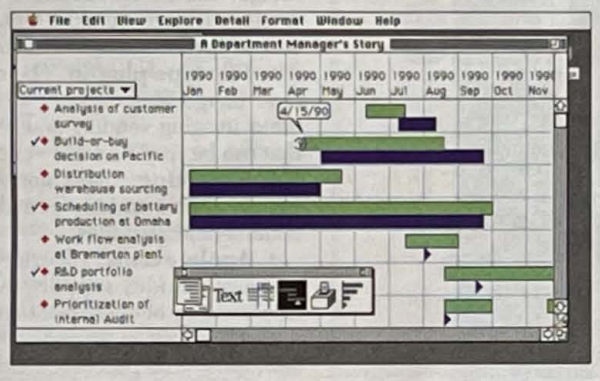
All views are linked and automatically updated when data is modified in any view, according to Chena. Custom screen layouts can be created and saved as menu items for easy retrieval.

"I use (Fair Witness) as a tracking system for my business," said Joseph Fanelli, advertising manager at Rohm and Haas Co., a chemical company in Philadelphia. "I can put information in at different levels and see just what I want. I use it to keep track of what the project is, who it's for, as well as critical dates and approval cycles."

On Macs running System 6.0.7 and higher, Fair Witness supports sound annotation. Under System 7.0, it also offers balloon help.

Volume discounts are available. Fair Witness comes with a training video, which also is available separately for $9.95.

Chena Software Inc. is at 905 Harris St., Allentown, Pa. 18103. Phone (215) 770-1210 or (800) 245-4577; fax (215) 770-1043. □



Fair Witness' Gantt-type chart lets users schedule start and end dates, as well as mark specific dates within time lines.

Microtech covers other vendors' drives

By Dartanyan L. Brown

East Haven, Conn. — Microtech International Inc. last week announced a new warranty-extension program that covers hard disk and CD-ROM drives from other vendors, as well as its own products.

The new offer extends by a year the original manufacturer's warranty on internal and external drives from Apple and Microtech, as well as external drives from CMS Enhancements Inc., Ehman Inc., EMAC, FWB Inc., GCC Technologies Inc., MicroNet Technology Inc., Mirror Technologies, PLI, Plus Development Corp., Procom Technology Inc. and Storage Dimensions Inc. Drives must still be under warranty.

Besides the extra coverage, the warranty provides toll-free technical support and customer service, same-day return shipping and $200 worth of coupons toward Microtech products. If Microtech fails to return a drive within 24 hours, the company will credit customers $100; the credit can be applied to service or products.

Pricing depends on drive capacity. Warranties are $59.95 for 20-Mbyte to 100-Mbyte hard drives; $89.95 for drives of 120 Mbytes to 210 Mbytes; $119.95 for hard drives of 320 Mbytes to 400 Mbytes, as well as CD-ROM drives; $169.95 for 650-Mbyte capacities; and $219.95 for drives of 1 Gbyte or more. The extended-warranty program can be purchased from any authorized Microtech dealer.

Microtech International is at 158 Commerce St., East Haven, Conn. 06512. Phone (203) 468-6223 or (800) 626-4276; fax (203) 467-8124. □

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Accounting execs form consortium

By Nathalie Welch

New Orleans — Apple last month announced the formation of the Macintosh Accounting Consortium, a coalition of accounting-software vendors whose bottom line is to get the accounting community thinking more seriously about the Mac.

Announced at the 10th Annual American Institute of Certified Public Accountants' Microcomputer Conference and Exhibition here, MAC's goal is to spur the development of Mac accounting packages.

Consortium activities also will include holding Mac accounting user forums, publishing an end-user and developer newsletter, and providing speakers at CPA conferences.

In addition to representatives from Apple, board members include chairwoman Kathleen Lane, who is president and CEO of SoftView Inc.; Doug Burgum, president of Great Plains Software Inc.; Ken Currier, president of Softsync/BLOC; Bill Goodhew, president and CEO of Peachtree Software Inc.; and Mitch Russo, president of Timeslips Corp.

The Macintosh Accounting Consortium can be reached at (408) 236-2797 or via AppleLink at MACACCT. □

Optix opens images to multiple users

By Allison de Laveaga

Flint Hill, Va. — Blueridge Technologies Inc. announced it will ship a multi-user version of its Optix document-imaging management software in September.

Priced at $695 per person, Version 3.0 will allow users in small groups to share image databases created with Optix over an AppleShare or compatible server. The company is positioning Version 3.0 between the current single-user version of Optix and Optix Network, a Unix, server-based system intended for large workgroups.

New features will include:

- **Forms Dropout/Forms Overlay.** Optix can remove boxes and lines when scanning or storing forms. Because users are storing data rather than the form template, images can be stored more compactly and retrieved more quickly. Optix overlays the correct form when a document is retrieved.
- **File type plug-in.** The new version will read image files created by products from other imaging vendors and write image files that can be read by other vendors' products.
- **Exporting.** Users now will be able to export Optix index records as tab- and comma-delimited files.
- **Apple events.** Blueridge said the new version includes support for System 7.0's Apple events of open, print and quit.

Optix users can upgrade to Version 3.0 for $49; those who purchased Optix after May 1 can upgrade for free.

Blueridge Technologies Inc. is at Flint Hill Square, Flint Hill, Va. 22627. Phone (703) 675-3015; fax (703) 675-3130. □

Foundation's EPlanner beefs up scheduling

By Rochelle Garner

Cary, N.C. — Foundation Solutions Inc. this month began shipping Version 2.0 of its EPlanner project-planning and -tracking program.

Now priced at $255, up from $95 for Version 1.5, the new version of the Gantt charting program adds a number of capabilities designed for users not skilled in project management to schedule and track tasks.

New features include:

- **Resources pools.** Users can share resources among different projects. Each resource has its own calendar.
- **Resource-loading histograms.** EPlanner now produces histograms, or bar charts, that display where resources have been assigned as well as resource conflicts. Clicking on a histogram calls up a report on resources described in that portion of the bar chart.
- **Import and export.** EPlanner can read and write files saved in tab-delimited ASCII format.
- **Dependencies.** Users can set task and milestone dependencies simply by pointing at a task and dragging a dependency line to another task. EPlanner automatically reschedules those tasks to reflect that dependency.
- **Customizable symbols.**
- **Annotations.** Text and graphics can be placed anywhere on the chart, attached to specific tasks.

Foundation Solutions Inc. is at Suite 270, 2000 Regency Parkway, Cary, N.C. 27511. Phone (919) 481-3517; fax (919) 481-3551. □

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Any Macintosh computer that is attached to a TCP/IP network via a gateway or an EtherNet card is now able to store and retrieve documents from any NFS volume. NFS/Share also gives you the option of storing Macintosh applications on your mounted volume and running them from there!

NFS/Share gives you the convenience of automatic translation between UNIX and Macintosh text files, giving you the means to edit UNIX test files with any Macintosh text editor and Macintosh text files with any UNIX text editor. With NFS/Share, the only thing you'll need to worry about... is where you'll fit the Cray on your desk.

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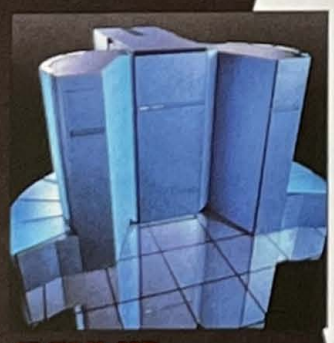
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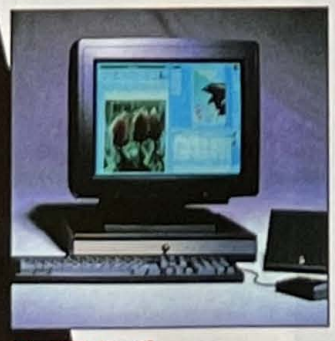
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Peachtree endorses link with Timeslips package

By Nathalie Welch

Norcross, Ga. — Peachtree Software Inc. has discontinued the Time Billing module of its Insight Expert Accounting Series in favor of Timeslips Corp.'s Timeslips III Accounting Link (TAL) For the Mac.

Available for $79.95, TAL For the Mac requires the Timeslips III time-billing program.

The Insight Expert Accounting Series, now priced at $395 per module, consists of General Ledger, Accounts Receivable and Billing, Accounts Payable, and Payroll and Inventory.

With TAL For the Mac, users can import time and expense records from Timeslips directly into the Insight Expert General Ledger, print statements on letterhead or special forms designed by Timeslips Corp., and print income reports in either detail or summary formats.

Timeslips Corp. markets both TAL For the Mac and Timeslips III, which costs $299.95 for single-user versions and $699.95 for the Network Edition.

Peachtree is offering current users a choice of Timeslips III and TAL For the Mac, another module from the Insight Expert Accounting Series, or six months of free technical support.

Peachtree Software Inc. is at 1505 Pavilion Place, Norcross, Ga. 30093. Phone (404) 564-5700 or (800) 247-3224; fax (404) 564-5888.

Timeslips Corp. is at 239 Western Ave., Essex, Mass. 01929. Phone (508) 768-6100; fax (508) 768-7660. □

Minitab makes shift to Mac interface

By Mitch Ratcliffe

State College, Pa. — Minitab Inc. last week began shipping a new Mac-interface version of its Minitab Statistical Software for Macintosh.

Release 8.1 of Minitab, priced at $695, is the first version that lets users manipulate statistics in a menu-based data editor. Previously, Mac users were required to enter data at a command line similar to the one in Minitab for DEC VAXes and IBM PCs and compatibles.

The new Mac version provides a series of menu selections and dialog boxes for entering, editing and viewing data.

The program now takes advantage of as much RAM as the user allocates to it. Previous versions had a fixed area set aside for data.

Other new features include calculations for general linear modeling and design of experiments functions, useful when establishing variables and tests. Data now can be exported to a spreadsheet in tab-delimited form.

In addition, Minitab now supports high-resolution graphics for charts, histograms, boxplots and scatterplots. Output is not presentation-quality, the company said.

Current users of Minitab can upgrade to Release 8.1 of Minitab Statistical Software for Macintosh for $200. Education and quantity discounts are available.

Minitab Inc. is at 3081 Enterprise Drive, State College, Pa. 16801. Phone (814) 238-3280; fax (814) 238-4383. □

CD-ROM lists NYNEX White Pages

By James Cury

New York — NYNEX Information Resources Co. last month announced Version 3.4 of the NYNEX Fast Track Digital Directory, a complete set of NYNEX White Pages telephone listings on CD-ROM.

Due to ship in the third quarter, the new version includes up to 10 million listings and provides several information-retrieval modifications designed to aid businesses that need to verify extremely large database information. Version 3.4 will ship as a LAN package.

Prices range from $595 to $9,500, depending on the number of geographic areas and required updates.

Users can purchase information about any area or from the entire six-state NYNEX region, and they can receive updates monthly, quarterly, semi-annually or annually.

NYNEX Fast Track provides telephone numbers for New York, Massachusetts, New Hampshire, Rhode Island, Vermont, Maine and sections of southern Connecticut. The directory now has more than 200,000 nationwide AT&T toll-free numbers.

NYNEX Information Resources Co. is at 100 Church St., New York, N.Y. 10007. Phone (800) 338-0646; fax (212) 513-9788. □

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Golden Triangle's TwinIt slashes cost of mirroring

By Henry Norr

San Diego — Golden Triangle Computers Inc., which brought continuous automatic backup to the Mac with its card-based DiskTwin duplexing system, next month will deliver a software-only solution for users with more-limited funds or expansion capabilities.

Called TwinIt, the new $249 control panel mirrors everything written to the user's primary storage device onto a second, identical disk on the standard SCSI bus. If the primary drive falls victim to a hardware failure, the backup unit is available instantly.

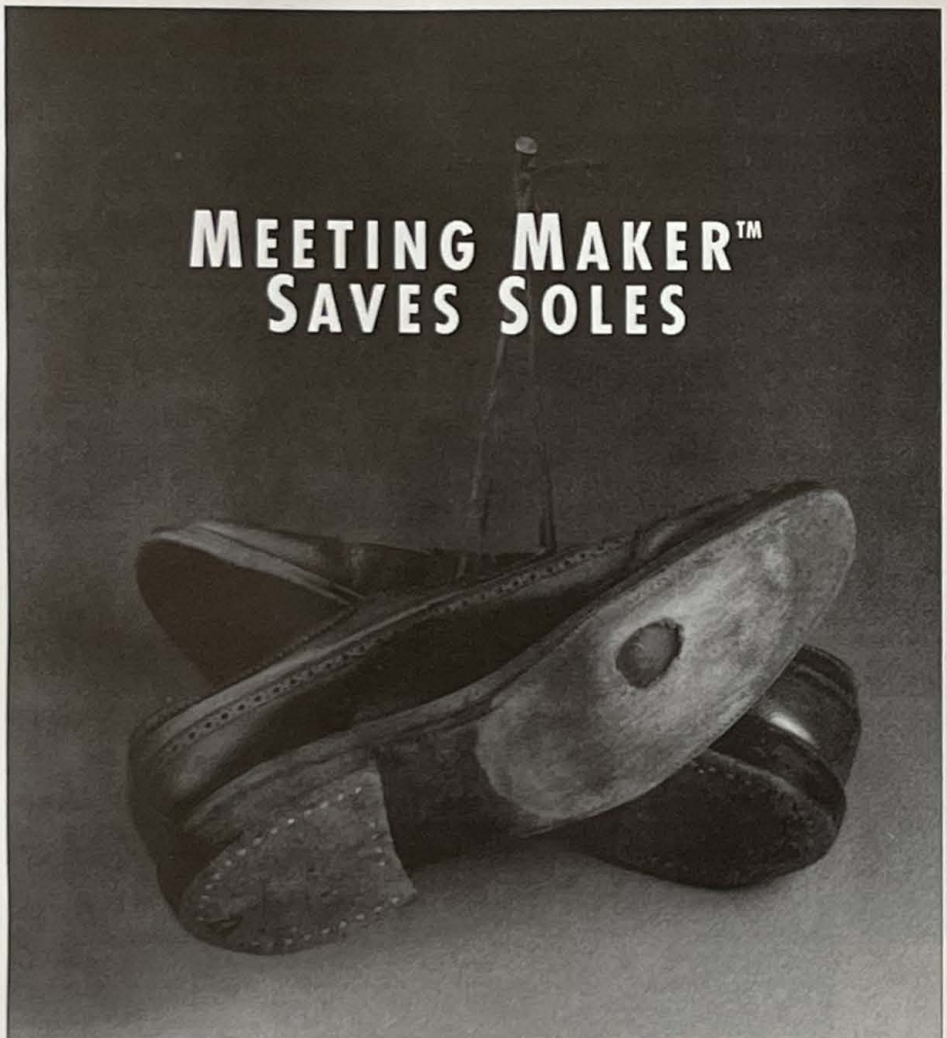
Golden Triangle said its software works with any Mac and with all manufacturers' hard drives and software, even when primary and twin disks come from different manufacturers.

Like other mirroring software products, TwinIt must write first to one disk, then to the other. That means some slowdown in overall performance, but Golden Triangle said the penalty is only about 10 percent on saves.

DiskTwin, the duplexing system Golden Triangle introduced a year ago, has less effect on performance because it includes a card that creates an independent SCSI bus for one of the drives.

That product, however, costs $999 and is limited to NuBus Macs and SE/30s with a free slot.

Golden Triangle Computers Inc. is at 4849 Ronson Court, San Diego, Calif. 92111. Phone (619) 279-2100; fax (619) 279-1069. □



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DiskMaker formats drives with one click

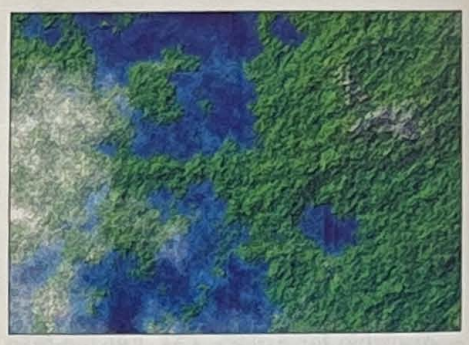
San Diego — The release of System 7.0 has brought several new vendors into the market for generic hard disk-formatting utilities and drivers.

The latest to offer a retail package is Golden Triangle Computers Inc., (see story above), which next month will begin shipping an $89 program it calls DiskMaker.

The program, which the company said works with all brands and models of SCSI hard drives, offers one-button installation for a basic drive setup.

More-advanced features, configurable through a control panel, include partitioning, write-locking and password protection. A master password offers access to any partition in case the user forgets its specific password.

DiskMaker, which grew out of the PartitionTwin software in Golden Triangle's duplexing product, is compatible with A/UX and System 7.0, including virtual memory, the company said. □



Terraform, one of more than 25 new display modules in More After Dark, uses fractal math to generate planet images.

After Dark goes MAD with 25 more displays

By Henry Norr

Berkeley, Calif. — After Dark users will be getting MAD by the middle of next month.

That's when Berkeley Systems Inc., publisher of the best-selling screen-saver package, plans to release a collection of more than 25 add-on display modules under the name MAD, or More After Dark.

Along with new displays of frolicking kittens, ducks in a confetti factory and a Mowin' Man who drives his mower in neat rows up and down the screen, the $39.95 set will include a playable arcade-style game called Lunatic Fringe by Ben Haller, author of Solarian II.

Also included are additional fish files for import into After Dark's Fish! module and Virex-D, a detection-only anti-virus module codeveloped with Microcom Inc.

A utility that will update any version of After Dark 2.0 to the System 7.0-compatible Version 2.0u will be shipped in the MAD package.

MAD requires After Dark 2.0 or later. Registered owners will receive a mailer offering the new package at a 50 percent discount, the company said. MAD also will be offered in a $69.95 bundle with After Dark, which has a suggested retail price of $49.95.

Berkeley Systems Inc. is at 1700 Shattuck Ave., Berkeley, Calif. 94709. Phone (415) 540-5535; fax (415) 540-5115. □

GO to bring MacroMaker back to life

By Henry Norr

Incline Village, Nev. — MacroMaker users who found themselves high and dry when Apple dropped the previously bundled macro utility from System 7.0 soon may get relief from a small developer here.

GO Technology Inc. next week will offer a System 7.0-compatible version of the program free to registered owners of any of its Hot Keys packages, a series of collections of predefined MacroMaker macros. The company said it licensed source code for the program from Apple and updated it in consultation with the original author, Don Denmann.

In addition, GO will introduce a new Hot Keys collection for Finder 7.0 and offer it at an introductory price of $29.95. Along with the updated MacroMaker, the package will include 35 Finder-specific macros, 20 standard global functions and a new desk accessory called Super 7, which provides 22 help screens covering the new operating system's basic features.

Hot Keys collections, priced at $59.95 each, include a universal set and program-specific packages for Aldus Corp.'s PageMaker 3.0 through 3.0.2 and 4.0, Claris Corp.'s MacWrite II, Microsoft Word 4.0 and Works 2.0, and Personal Press from Aldus' Silicon Beach Software subsidiary. The macros are designed for use with the function keys on extended keyboards.

Each set comes with a plastic keyboard template and MacroMover, a DA for transferring macros from one set to another.

GO Technology Inc. is at P.O. Box 7667, Incline Village, Nev. 89450. Phone (702) 831-3100 or (800) 468-5391; fax (702) 831-3118. □

Client-server arrangement helps health-care services

EDS designs system for Macs, DEC VAX

By Emily Kay

Burlington, Mass. — Like most of us, Craig Foster used to "read a fair amount" while waiting to see his doctor. "I would wait an average of 15 or 20 minutes for an appointment," said Foster, who operates a dry-cleaning business in Lexington, Mass.

For Foster and other patients with Harvard Community Health Plan's (HCHP) Burlington Health Center here, the wait has been cut dramatically because of a client-server system developed by InterPractice Systems, a joint venture between HCHP and Electronic Data Systems Corp. The Burlington site, one of 36 HCHP locations in Massachusetts, is the first to use the integrated clinical, administrative and financial system to manage every aspect of patient care and billing.

Foster said he waited just 15 seconds the first time he went to see his doctor after the system was in place.

Dr. Max Walten, a pediatrician with the center, agreed that the system helps him manage his time.

Before he answers phone calls between 7:30 a.m. and 8 a.m., Walten logs on to his Macintosh to review patients' medical records stored on a VAX 6420 server from Digital Equipment Corp.

"I look up the patient schedule to see where I have openings, so I can rank the acuteness of illness and see how best to fit them in," Walten said. "When parents call and tell me their child is no better on a certain medicine, I can bring the chart up, see what diagnosis and treatments were made and make changes. The concept of missing or lost charts is eliminated."

The system, based on an Ingres database running on the VAX, links physicians, administrators and patients to improve patient access to doctors, boost efficiency of office visits and improve the coordination of information.

Doctors use Mac IIci systems in their offices to access the VAX via TechGnosis Inc.'s SQL Link. The Mac initiates the request for information from the VAX server, which retrieves the information from the database and displays it on the screen of the Mac client.

Most of the logic processing occurs on the VAX, while Mac users can edit data, said Michael Palmer, manager of EDS' Technology Transfer Group in Plano, Texas, which helped design the system to doctors' specifications.

"Each piece is doing what it's good at," Palmer said. "The database is good at data retrieval. The workstation is coordinating everything and telling the server what to bring back and what to print."

In examination rooms, physicians write prescriptions on DEC VT 420 terminals. Doctors can customize lists of medications they most often prescribe for ailments. "You almost eliminate typing with the quick pop-up lists," Palmer said. "They're customized to each doctor for the medicines, X-rays and lab procedures a doctor normally orders."

A doctor may have 10 or 12 windows on a screen at a time, all accessing different pieces of the database. For example, a doctor can call up a patient's habits, past prescriptions and allergies, and determine from the data whether a patient's problem is linked to a drug allergy. Doctors said they like the system's simplicity.

Burlington now has 32 workstations and 90 terminals talking to one VAX 6420 server, which HCHP already owned. EDS chose the Mac to minimize the amount of training doctors would need. The business and workstation codes, which took 18 EDS employees six months to develop, were written in SmallTalk.

HCHP's client-server system

Vital statistics of the client-server system used by Harvard Community Health Plan

- Server: DEC VAX 6420
- Client: Mac IIci
- Database: Ingres
- Access: TechGnosis' SQL Link
- Development: 18 EDS employees wrote business and workstation code in six months using Smalltalk.

A separate team worked on the server code in the same time period. Some 64 Macs and 150 terminals are planned, Palmer said.

Eventually, HCHP will install an integrated expert system that will help patients practice preventive medicine from home. "The system will ask patients questions and give them options, such as 'Go to an emergency room,' or 'Call your doctor for an appointment,' " Palmer said.

Patients may not know what's behind the increased efficiency, but they do notice it.

"I'm not sure they sense that it's the computer making things go more easily for them," Walten said. "But people are remarking on how quickly things seem to get done." □

LANDesign 1.14 offers five new export formats

By James Cury

Thornhill, Ontario — COMPUneering Inc. is now shipping Version 1.14 of LANDesign, its land surveying, coordinate geometry and subdivision layout software for the Mac.

Designed for use by professional surveyors, civil engineers, land planners, architects and archaeologists, the $595 program now supports five new export formats and a Data Collectors module.

The new version, compatible with System 7.0, now lets users save images in DXF (Drawing Interchange Format); CGDEF (ComGrafix Data Exchange Format), the format supported by ComGrafix's Geographic Information System program, MapGrafix; FlexiScript, an output format for Amiable Technologies Inc.'s FlexiCAD; MacDraw II; and the native format of Claris CAD.

The five output options with LANDesign cost $275, or $300 when purchased separately.

LANDesign's new Data Collectors module, priced at $375, allows users to download data collected in the field directly to LANDesign. The software works with data collectors from Lietz/Sokkisha, Pentax Instruments, Geotronics of North America Inc., Topcon Instrument Corp. of America and compatibles.

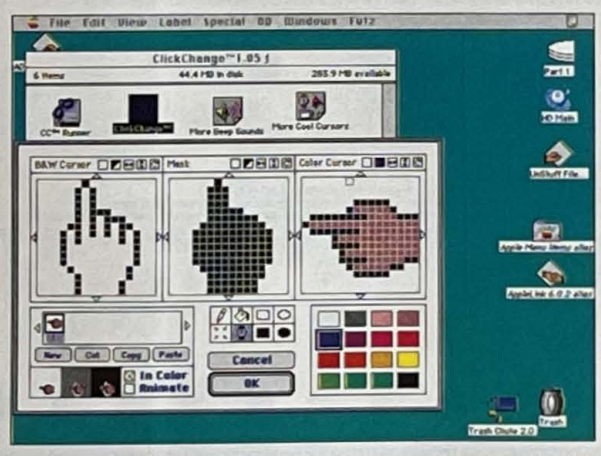
COMPUneering Inc. is at 113 McCabe Crescent, Thornhill, Ontario, Canada L4J 2S6. Phone (416) 738-4601; fax (416) 738-5207. □

ClickChange now System 7-compatible, also brings '7-Oh' look to System 6

By Henry Norr

Chatsworth, Calif. — A new version of Dubl-Click Software Inc.'s ClickChange makes the interface-customization utility compatible with System 7.0 and lets System 6 users adopt the look of the new system even before they upgrade.

Version 1.05 of the $89.95 control panel is 32-bit clean, according to the company. It provides balloon help and runs from any of three locations: control panels, extensions or System folders. Eight new color sets designed for System 7.0 have been added; changes in window, scroll bar and button styles now show up immediately, without rebooting. The new release also includes more beep sounds, animated cursors and patches for incompatible programs.



In addition to predefined alternative cursors, buttons, sounds, color sets and window styles, ClickChange lets users manipulate the Mac interface.

For users of System 6, the package includes a variety of what Dubl-Click calls 7-Oh options, including 3-D windows and restyled scroll bars.

Users can receive the new version by returning their original disk and a stamped, self-addressed envelope with 52 cents postage for U.S. delivery. Users who have previously registered have the option of ordering the update by phone for $5 or by contacting the company on America Online (keyword: DublClicks) or GEnie (mail to DUBLCLICK).

Dubl-Click Software Inc. is at 9316 Deering Ave., Chatsworth, Calif. 91311. Phone (818) 700-9525; fax (818) 700-9727. □

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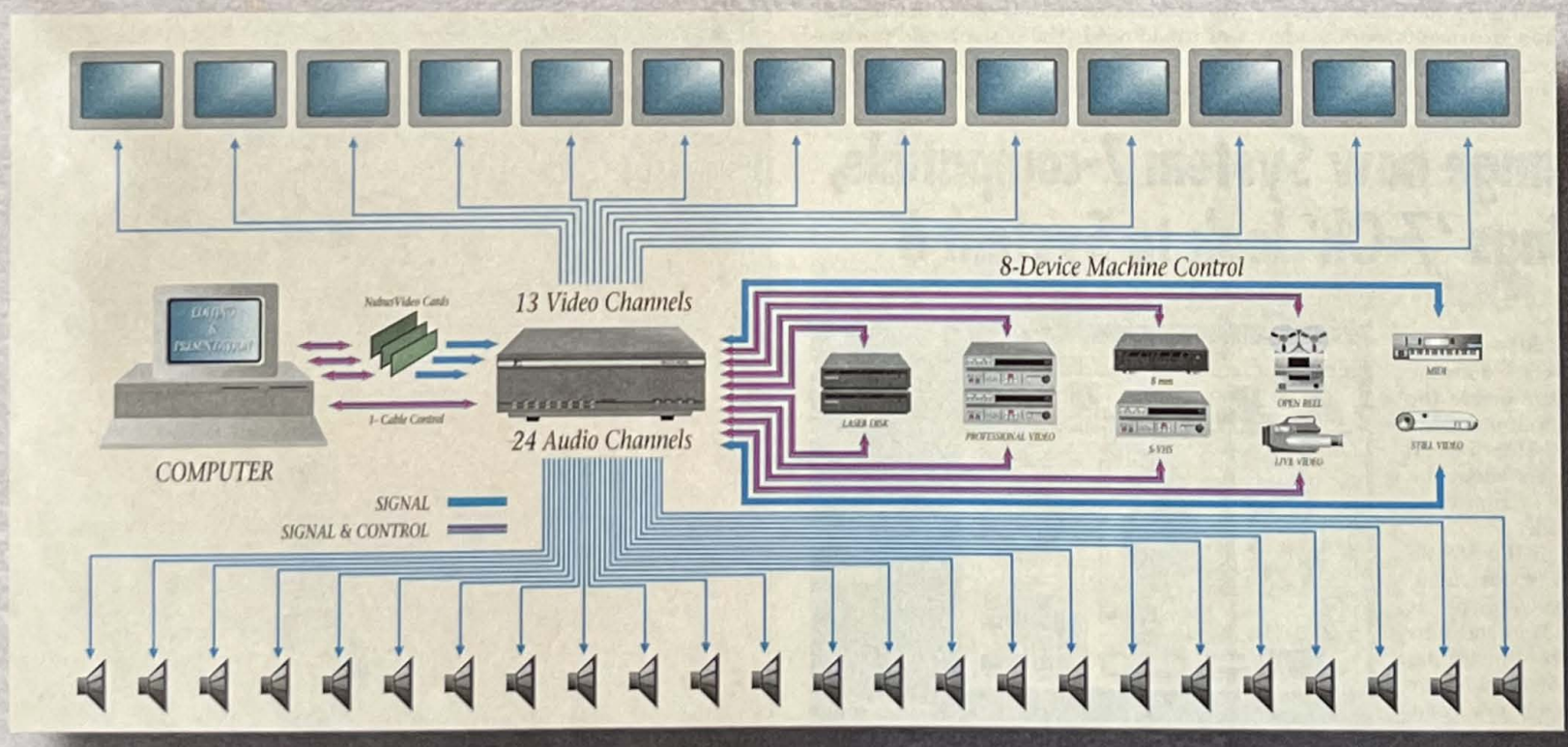

See The IMTX 8000 during MACWORLD Expo/Boston Aug 6-9 at the Four Seasons Hotel

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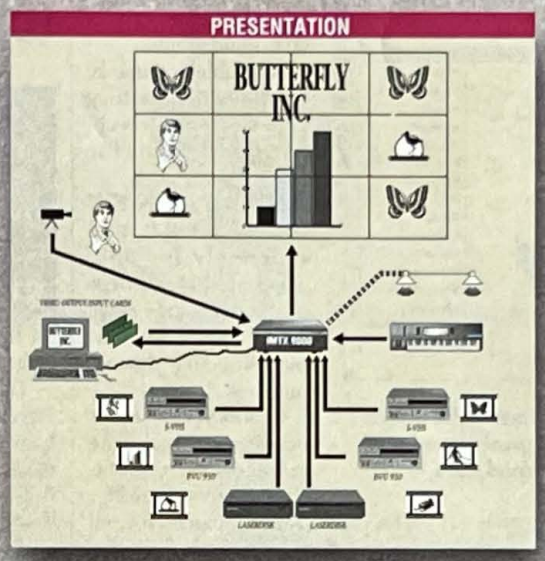

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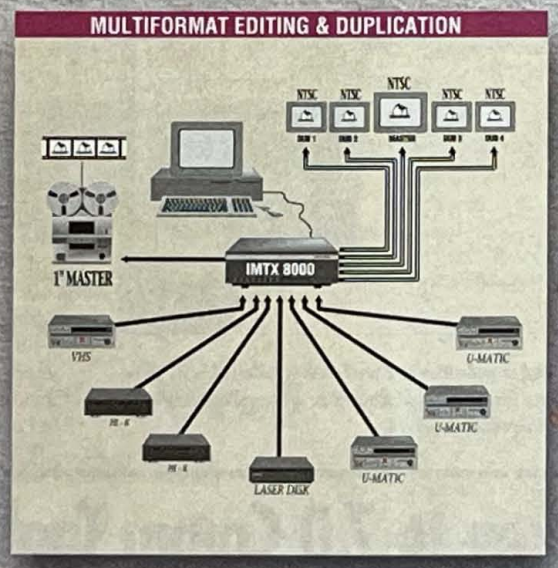

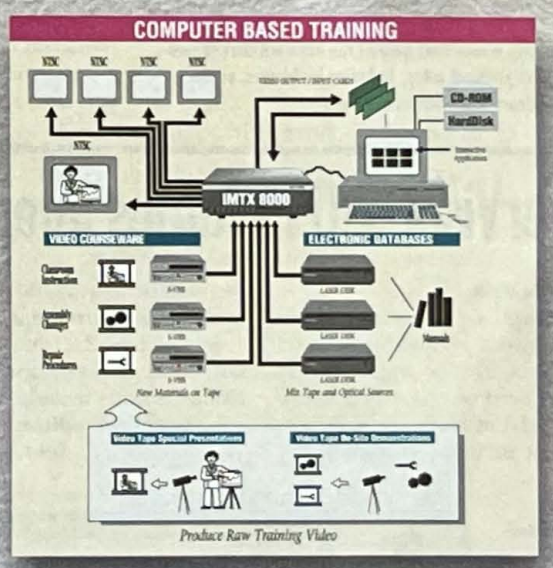

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Farallon unwraps Manager's Pack

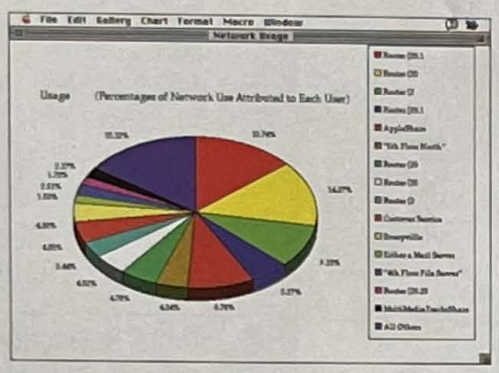
Assorted net tools offer maps and stats

By Margie Wylie

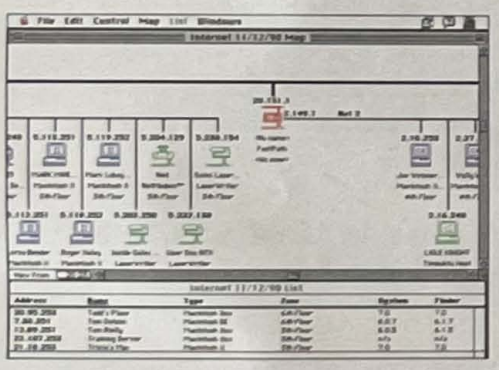
Santa Clara, Calif. — Farallon Computing Inc., one of the original players in Mac networking, disclosed some of its future product plans and finally released its long-promised management-software suite at the Mactivity '91 conference here last week.

The PhoneNET Manager's Pack, now shipping at an introductory price of $995, offers an assortment of network-troubleshooting tools.

- **TrafficWatch II,** available separately for $495 until Sept. 1, lets managers monitor network traffic concentrations and errors to design and balance network loads. Data can be exported to a spreadsheet for analysis.



PhoneNET Manager's Pack users can export traffic statistics from CheckNet into a Microsoft Excel spreadsheet and create charts, graphs and reports using an included macro.



NetAtlas draws a real-time map of the network that shows its hierarchical physical setup, including backbones, routers, network modems and other connections.

The software, which will normally retail for $895, works with both Ethernet and LocalTalk. It does not include low-level packet-decoding capabilities.

- **NetAtlas** draws real-time logical maps of even complex Mac networks. Maps depict device names and types with color-coded icons, including network routers, printers, nodes and modems.

Users can retrieve information from Apple's Responder, test network connections and compare archived network maps with newer ones.

Using an included macro, users can export NetAtlas reports to a Microsoft Excel spreadsheet to create charts and graphs.

Available separately for the introductory price of $595, NetAtlas will retail for $895 after Sept. 1.

- **PhoneNET CheckNET 2.0,** sold separately for $99, will search for devices by name or type across zones and display all active devices on a net.
- **NetStats** shows managers a real-time graphical representation of network traffic.

The package also includes several unexpected goodies, including two copies of Timbuktu 4.0, the latest version of Farallon's screen-sharing and file transfer program. Retrospect Remote, a network-backup program for servers and Macs, is bundled under a licensing agreement with Dantz Development Corp. of Berkeley, Calif. StarCommand 2.2.1, Farallon's network-hub management software, also is included. The package comes with one year of free updates. It will retail for $1,895 after September.

The company also announced plans for a centrally powered, air-cooled rack that will allow its StarController LocalTalk and Ethernet hubs to snap into a backbone.

Farallon discussed plans for adding TCP/IP support and a dedicated hardware platform to its software-only Liaison router, which will snap into the rack to provide routing between LocalTalk hubs and an Ethernet backbone.

The company declined to discuss release dates or prices. The showings will be repeated at Macworld Expo next week in an off-the-floor suite, according to Tom Rielly, Farallon director of marketing.

Farallon is at 2000 Powell St., Suite 600, Emeryville, Calif. 94608. Phone (415) 596-9000; fax (415) 596-9020. □

SuperVisor 2.0 revamps interface

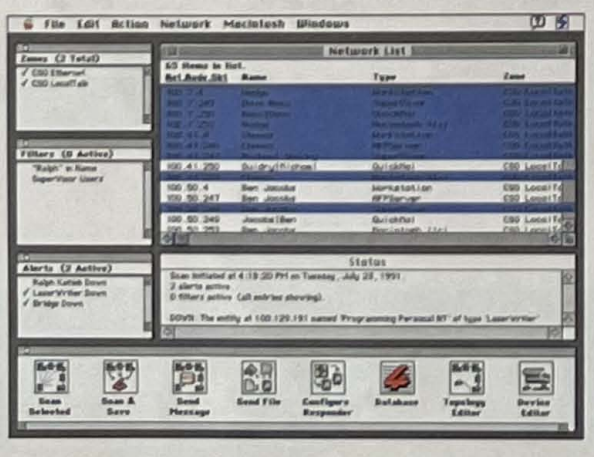
By Margie Wylie

Pittsburgh — Blending a little bit of network know-how with its Mac management application, CSG Technologies recently announced a new version of SuperVisor that includes automatically generated network maps, network updating and a revamped interface.

SuperVisor 2.0, due in the fall, will start at $495 for 20 users. Enhancements include:

- **Topology editor.** While they

See CSG, Page 21



SuperVisor 2.0's new interface features include the Network Command Center, where Mac managers can request and view node information, set and view alarms, and apply filters to incoming information.

PacerForum: 'Bulletin-board' comes to AppleTalk groupware

By Dale Coleman

PacerForum, an AppleTalk-based groupware product in the final stages of development by Pacer Software Inc., represents a fresh perspective on how workgroups can best share ideas and information.

The visual metaphor for PacerForum is the old-fashioned bulletin board, although structurally it more closely resembles a well-designed, full-featured computerized bulletin board service with message threads and a library of files. The important difference is that PacerForum is much more intuitive than even the best-organized BBS.

While many workgroup tasks, such as distributing messages, files and pictures, can be accomplished with existing electronic-mail products, PacerForum is much more efficient. Compared with PacerForum, most current E-mail-based methods for distributing or broadcasting files seem as archaic as text-based electronic-information services.

Serving clients. Like most AppleTalk-based groupware products, PacerForum employs a client-server architecture. The PacerForum server may be dedicated, or it may coexist on the same server with AppleShare and E-mail products. In small network configurations, the PacerForum server may be run on a user's Mac. The PacerForum administrator is responsible for granting access and privilege levels to users, assigning initial passwords, and creating task- or interest-oriented groups, as well as the usual server-file maintenance chores.

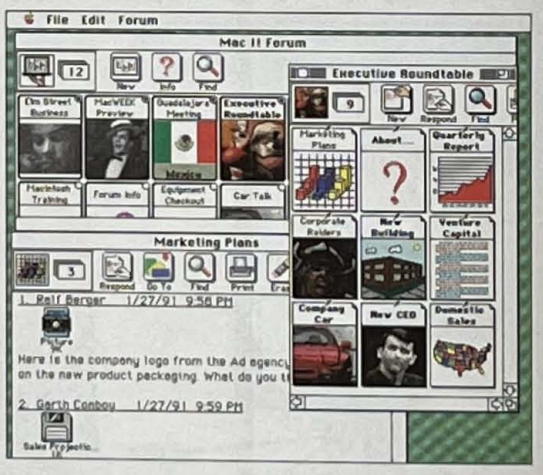
Users ("clients," in groupware-speak) access the PacerForum server with a small application under System 7 or a desk accessory under System 6.

It's done with bulletin boards. PacerForum is organized into multiple bulletin boards. Each bulletin board can contain multiple topics. Topics in turn consist of messages posted by users and may include attached files, images and sounds.

Each of these levels is displayed in its own window. Opening the main PacerForum window reveals named icon tiles, one for each bulletin board. Bulletin board icons are sorted first according to user-specified topics, then by the date of the most recent response. This window also contains buttons for creating a new bulletin board, modifying the characteristics of the current bulletin board and searching for a specific bulletin board by name.

Clicking on a bul-

See Pacer, Page 21



The three-level organization of PacerForum is reflected in its three main windows. The opening window (Mac II Forum) contains icons for each available bulletin board.

Developers await key to 7.0 Comm Toolbox

By Mitch Ratcliffe

Cupertino, Calif. — Although System 7.0 includes a new version of the Macintosh Communications Toolbox, users will not have access to any of its new features until this fall at the earliest, according to developers who are still waiting for code from Apple.

"Version 1.1 [of the Toolbox] is in System 7.0," said Leonard Rosenthol, senior programmer at Software Ventures Corp. of Berkeley, Calif. "[But] no one has had the code to integrate the new features into their tools."

The Toolbox is designed to give applications a standard way to work with a variety of communications protocols. Adding support for additional protocols requires only that the user "drop" in a new tool. Apple provides some tools; others have been developed by third parties.

Version 1.0 of the Toolbox has been available as a Startup document (INIT) for System 6 since 1989. But developers said its value is limited because it does not support multiple terminal sessions or multiple file transfers.

Code Apple shipped this month to a select set of developers will allow them to write tools that can use multiple-session and file-transfer

See Toolbox, Page 20

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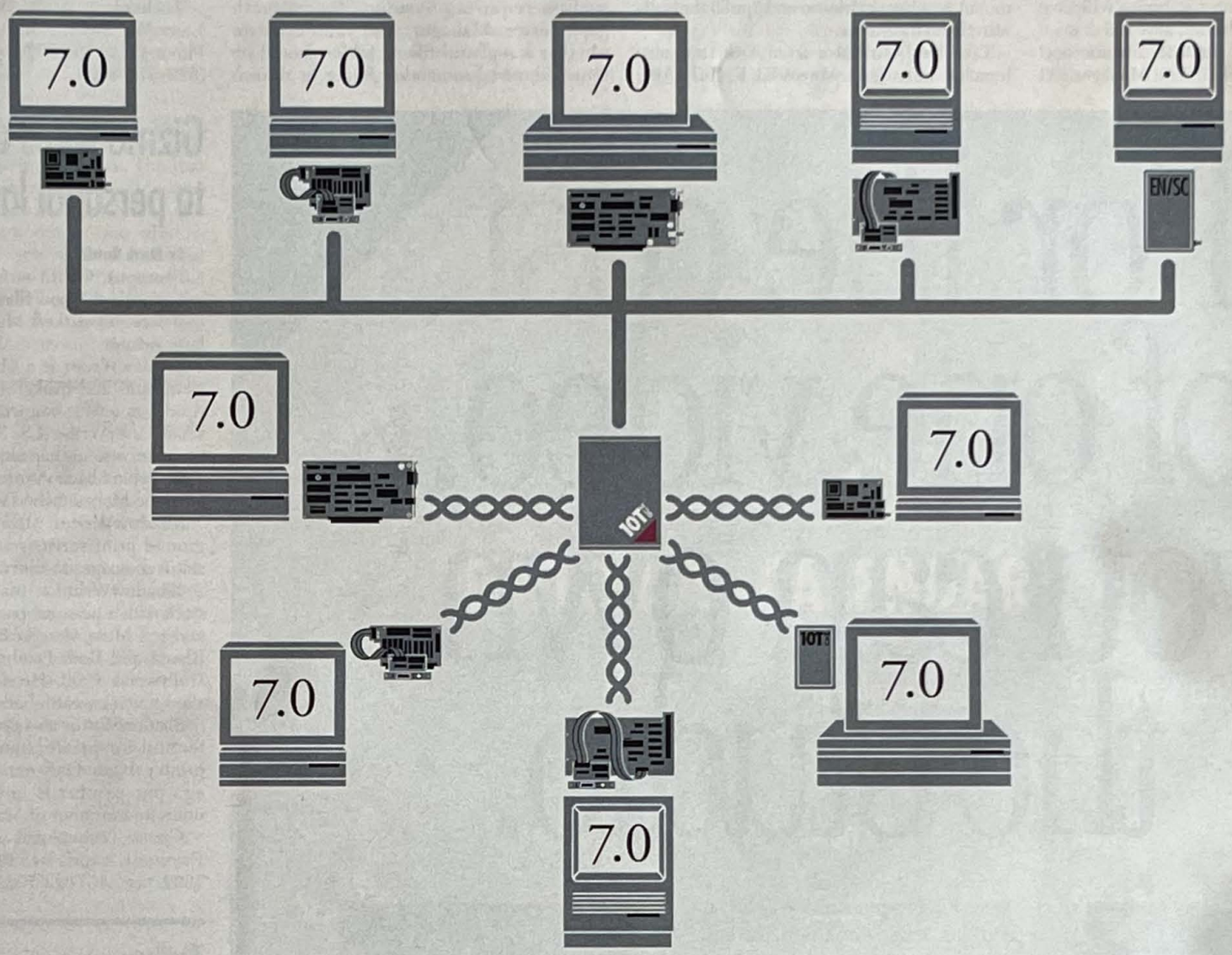
When It Comes To System 7.0, Asanté Is Number 1.0



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GraceLAN to look before it installs

By Margie Wylie

Austin, Texas — Anticipating the software avalanche precipitated by System 7.0, Technology Works Inc. last week announced a "smart" network updater it hopes will save managers from being buried alive.

Due in September for $295 for one network zone, GraceLAN Update Manager lets an administrator use a single Mac to "push" software updates out to other networked Macs with no action from their users. Apple's network installer requires each user to mount a network volume and "pull" the software from the server.

Like NetDistributor from Trik Inc., also located here (see MacWEEK, July 16), GraceLAN Update Manager lets users assemble an update package of files and folders and set conditions for installing the software.

Different parts of a single package can be distributed among a number of folders, including System 7.0's new special folders. Managers also can set minimum hardware and software requirements for installation, such as requiring System 7.0 or a math coprocessor. Managers also can designate whether a replaced file or folder should be renamed, saved to another folder or thrown away. To minimize traffic, the installation package is compressed before being sent over the network.

Managers can track the history and status of updates and draw reports through an audit trail.

A GraceLAN Update Manager license for unlimited zones costs $495.

Technology Works Inc. is at 4030 Braker Lane W., Suite 350, Austin, Texas 78759. Phone (512) 794-8533 or (800) 688-7466; fax (512) 794-8520. □

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If you can use a Macintosh, you can now edit a video. The edit list display provides a picture of your video, with miniature keyframes and icons showing the type of clip (video, audio, or graphic) or transition. Change a sequence simply by dragging clips into position, then watch them roll.

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Gizmo wires up Mac nets to personal laser printers

By Mitch Ratcliffe

Fremont, Calif. — Gizmo Technologies last month shipped ShadowWriter, software that lets networked Macs share a personal laser printer.

ShadowWriter is a $179 bundle of system extensions and background applications that reside on a Mac connected to an Apple Personal LaserWriter LS, SC or IISC. It allows the otherwise unshareable printer to appear as a shareable ShadowWriter icon in the Chooser of all the Macs attached to the same network.

ShadowWriter Monitor provides background print services and returns error and status messages to users.

"ShadowWriter is really handy for anyone stuck with a personal printer they can't share," said Jeff Moss, vice president of production at Blanki and Bodi Productions Inc. in North Hollywood, Calif. He uses ShadowWriter to allow seven users to share a LaserWriter IISC.

ShadowWriter also provides password protection for printers and the ability to log printer usage. Only one ShadowWriter package per printer is necessary to serve an unlimited number of Macs.

Gizmo Technologies is at P.O. Box 14177, Fremont, Calif. 94539. Phone (415) 623-7899; fax (415) 623-7922. □

Toolbox

From Page 18

features in Communications Toolbox 1.1. The new tools will give users the ability to launch several asynchronous mainframe terminal sessions at one time, as when using two or more modems to log onto an IBM server. Communications Toolbox 1.1 also gives the Mac the capability to handle file transfers in batches.

Now developers have to write tools that include the new code, which lets them hook into Communications Toolbox 1.1.

Capabilities recognition, another new feature, will make Communications Toolbox 1.1 work more intelligently. Once this feature is supported by tool writers, the Communications Toolbox will be able to examine tools, determine their capabilities and link them together to provide more-efficient services.

"We expect general seeding (of the new code) to developers in two to three months," said Alistair Woodman, Apple product marketing manager.

But most tools that use the Communications Toolbox's new capabilities will probably not appear until early 1992.

"Tools take a long time to write because they have to include code for a lot of background processes," said Peter Mackie, president of Seaquest Software Inc. of Portland, Ore., a Communications Toolbox tool developer who received the code in July. "I will have an X and Y modem tool that will handle multiple file transfer in 45 days." □

CSG

From Page 18

are not literal representations of network structure, the maps the program generates indicate where the network may be experiencing problems by graphically showing when a node is down.

Managers can edit the map to represent the network's true physical structure more closely, show a backbone, or insert hubs and routers.

▸ **Network updating.** Under System 7.0, managers can send files to a user's System, Apple Menu Items, Control Panels, Extensions or Startup Items folders or to a special From Manager folder on the users' desktop.

▸ **Network Command Center.** The hub for all SuperVisor 2.0's operations, the Command Center lets managers view the database of network nodes in one window and create, edit and view alerts in another. Managers can set alerts for the appearance or disappearance of a node or service.

Node information, such as processor type, system software, applications and memory, can be retrieved or updated by clicking on a button from this window. The program also gathers information about other AppleTalk nodes and services, such as a printer or mail server.

▸ **Compliance checker.** This new feature lets managers create custom searches that check nodes to see if they comply with corporate hardware and software standards.

▸ **New scans.** Version 2.0 now will pick up System 7.0 information, including whether a node has virtual memory, file sharing and program linking turned on. It can indicate whether an application is 32-bit clean or supports Apple events.

The new release can accept information from either the SuperVisor Responder system extension or Apple's Responder.

The new version also will allow users to prevent a supervisor's scan; scan their own station; or imbed custom information, such as serial numbers or employee number, in a scan.

SuperVisor 1.0 owners who bought the package through June 15 can purchase the upgrade for $49 plus shipping and handling.

A 50-user version of the software is $795, a version for 75 users costs $995, and a site license is available for $1,295.

Like the previous version, Supervisor 2.0 is based on ACIUS Inc.'s 4th Dimension database. CSG now offers uncompiled code for the application for $1,995, so managers can add their own fields.

CSG Technologies, a division of Management Science Associates Inc., is at 530 William Penn Place, Suite 329, Pittsburgh, Pa. 15219. Phone (412) 471-7170; fax (412) 471-7173. □

Pacer

From Page 18

letin board's icon opens a second window containing an icon for each topic in that bulletin board. Clearly labeled buttons along the top of the window let users create, respond to, find or print a topic.

Double-clicking on a topic opens the Topic window, which includes the name, date and time of each response in addition to the response itself. PacerForum appears better suited to brief responses with attachments (application files, pictures or sounds) rather than long-winded discourses. As with other PacerForum windows, the Topic windows contain buttons, in this case for responding, navigation and printing.

Think icons. Icons are important to the PacerForum scheme of things, and the product provides a simple but elegant way to incorporate them in postings. Icons may be chosen from a list maintained by the administrator or copied from the Mac Clipboard. Any graphical element that the Clipboard can handle is suitable icon material. PacerForum includes a simple but capable tool for sizing and cropping the graphic chosen to be the icon.

PacerForum's use of icons and windows for managing the electronic bulletin board is well-conceived and effective. It results in two immediately obvious benefits for managers: Very little training will be required, and users will actually use the system because in most situations, it will be the most efficient method available.

Part of the group. Like the upcoming Inforum from MacVONK•USA Inc. of Narberth, Pa. (see MacWEEK, June 25), PacerForum should prove well-suited to a variety of common collaborative tasks in the modern office. Pacer Software suggests applying its technology to group planning, design and specification discussions, project schedule and budget monitoring, news broadcasting, help and input solicitations, and distribution of software utilities and updates.

The efficient distribution of information is critical to the success of most organizations. To that end, PacerForum promises to be a very useful tool that will greatly facilitate office communication.

PacerForum will be $549 for five clients and one server.

Pacer Software Inc. is at 7911 Herschel Ave., Suite 402, La Jolla, Calif. 92037. Phone (619) 454-0565; fax (619) 454-6267. □

SEPTEMBER

EDITORIAL CALENDAR

Issue date	ProductWatch	Display close	Showcase close
Sept 10	Training	Aug 29	Aug 27
Sept 17	Spreadsheets	Sept 5	Sept 3
Sept 24	Add-in boards	Sept 12	Sept 10

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MacWEEK

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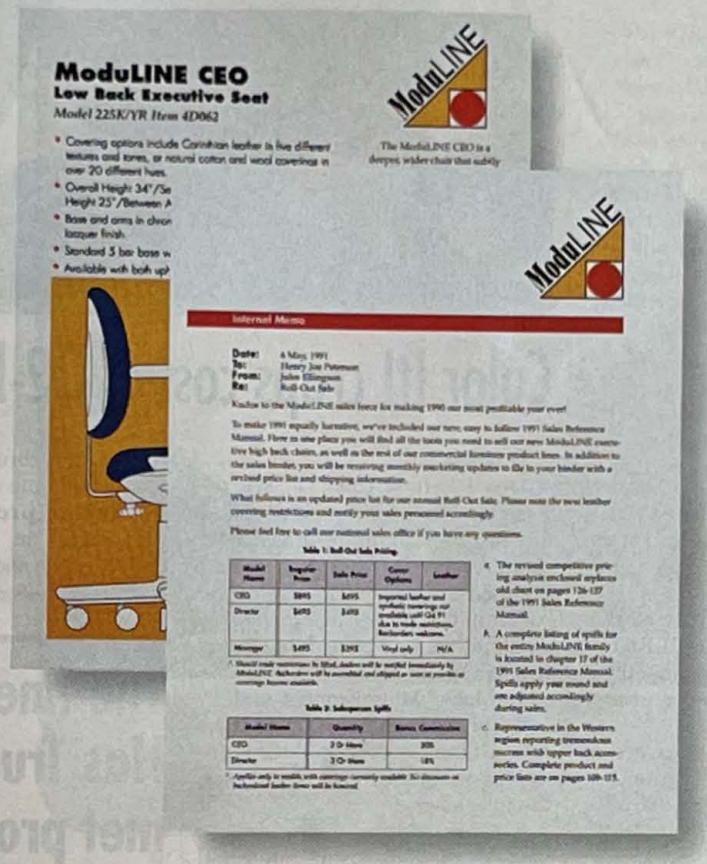
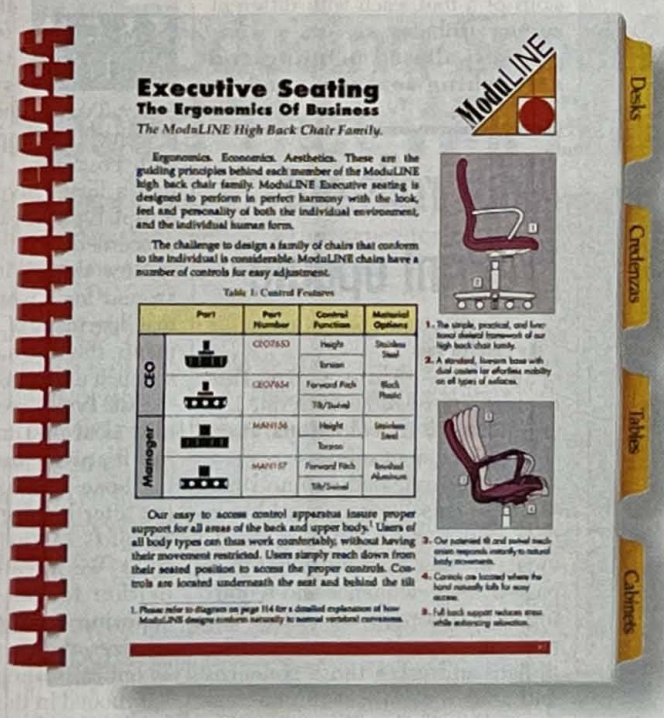
able seat in document publishing.



FrameMaker's integrated table editor lets you easily create detailed tables with straddled cells, graphics, unlimited paragraphs, and rotated text within cells.



In long, structured documents, FrameMaker automatically reformats the entire document, updating page numbers, paragraph numbers and multichapter cross-references.

To experience a whole new comfort level in document publishing, have a seat in front of a Macintosh® running FrameMaker.®

▶ FrameMaker integrates the entire publishing process into one easy-to-use application: Authoring, editing, graphics, page layout, production, even hypertext. Whether you create short, simple documents or long, structured documentation, you'll feel right at home with FrameMaker.

▶ You'll find our new version, FrameMaker 3.0, even more inviting. You can create your own intricate, multi-page tables with its sophisticated table editor. And generate and maintain multiple versions of a single document with its conditional text capabilities. You can even import full-color images and produce four-color output of DCS images.

▶ That's the kind of innovation that earned FrameMaker an Editor's Choice award from MacWEEK and accolades from MacUser.

▶ And of course, it's compatible with System 7.0.

▶ So call 1-800-U4-FRAME ext. 960 for more information on FrameMaker 3.0 and the name of your nearest reseller. And feel how comfortable a position in publishing can be.

Frame™

Tektronix warms up thermal color

Phaser II PXi prints PS Level 2 at 300 dpi

Tektronix's new Phaser II PXi thermal-wax color printer offers a palette of more than 8 million colors. It can print on letter- and legal-size paper and transparencies.

By Neil McManus

Wilsonville, Ore. — Tektronix Inc. this week will introduce the Phaser II PXi, a new PostScript Level 2 thermal-wax color printer.

The 300-dpi printer, available immediately for $7,995, comes with 6 Mbytes of RAM and can be upgraded to 10 Mbytes. It is centered around a 24-MHz AMD 29000 RISC (reduced instruction set computing) controller.

The Phaser II PXi provides a palette of more than 8 million colors and comes with 39 Type 1 fonts. In addition to PostScript Level 2, it offers HP-GL compatibility.

The new Tektronix printer offers automatic switching among its serial, parallel and AppleTalk ports. It also contains a SCSI interface that can be used to connect a hard disk for font storage and caching.

The Phaser II PXi comes with Tektronix's TekColor PS technology, which allows users to better match colors between their displays and printouts. TekColor PS also downloads a color-rendering dictionary to the PostScript Level 2 interpreter that allows users to tweak specific hues.

The printer is also Pantone-certified to simulate Pantone Matching System colors.

In addition, PostScript Level 2 adds a number of color advances, including a device-independent system for describing colors that eventually will allay color inconsistencies between printers.

The Phaser II PXi comes with a 100-sheet cassette that can handle both letter- and legal-size paper and transparencies.

Tektronix also will cut $2,000 off the price of its Phaser II PX this week. This PostScript-compatible, 300-dpi thermal-wax color printer will retail for $5,995.

Tektronix Inc. can be reached at P.O. Box 1000, Mail Station 63-583, Wilsonville, Ore. 97070. Phone (503) 682-7377 or (800) 835-6100; fax (503) 682-3408. □

Color It!, a 32-bit-color paint program to be priced at less than $120, offers an array of high-end features, including a virtual-image system, editable tools and multiple Undo and Redo.

Color It! crops cost of 32-bit paint

By Carolyn Said

Des Moines, Iowa — MicroFrontier Inc. next week will ship a 32-bit-color paint program that promises the features of high-end programs for a low-end price tag.

Color It!, priced at $119.95, is designed as an "affordable color paint program" for the "affordable color Macs," MicroFrontier said.

Color It! builds on the company's Enhance gray-scale image-editing program. Features include the following:

▸ **A proprietary virtual-image system** that lets users open and edit multiple documents larger than available memory.

▸ **An editable tools palette** that allows users to move tools around and create custom toolboxes. Users can create multiple versions of a tool, each with different custom attributes.

▸ **Anti-aliased painting and retouching features,** such as Advanced Airbrushes and Smudge, Sharpen, Stamp and Smooth tools.

▸ **Image processing effects,** such as Lighten, Darken, Auto Contrast, Sharpen and Smooth filters.

See Color It!, Page 26

SCREEN TEST

Artist turns to Swivel 3D to picture population trends

New York — Creating interesting infographics in a matter of days is a typical part of Joe Lertola's job as an illustrator at Time magazine.

"Coming up with ideas is the most important part of my job," Lertola said. "I may spend a day thinking about an idea before I work on it."

When Lertola was asked to create an infographic to accompany a story about population trends, the assignment was especially daunting because the story contained few concrete numbers.

Lertola began the graphic with a quick pencil sketch and then used Swivel 3D from San Francisco-based Paracomp Inc. on a Mac IIci with a 19-inch monitor from RasterOps Corp. He first drew an outline of the United States with a hole in the middle, made a brown copy and a green copy, stacked the green copy on top of the brown copy, and placed them on an olive-green background. He then drew the shapes of the three states with strong population growth and moved them into place.

Next, Lertola worked on the figures. He made one figure and copied it six times, adjusting each copy using Swivel 3D's Ball Joint tool to rotate the arms and legs into running, standing and sitting positions. Lertola used the same method to create the ladders. He placed copies of the figures and ladders as he looked at the map in top view, so each would be on the same plane.

To finish off his 3-D creation, Lertola rotated the map to a 45-degree angle and used Swivel's shadowcasting ability. He then saved the image in six PICT files to achieve high resolution. Lertola opened the files in Adobe Photoshop and copied them together. He created the background water image with Photoshop's Ripple filter.

The illustration took between 30 and 40 hours to complete. — By Allison de Laveaga

Aldus rolls out PrePrint update

By Carolyn Said

Seattle — Aldus Corp. this month shipped Aldus PrePrint 1.5, an update to its color-separation and enhancement software.

Originally released in June 1990, the $495 package generated heavy user criticism for printing documents in color-by-color rather than page-by-page sequence and requiring users to print an entire file rather than selected pages. The update addresses those concerns and adds more than 40 new features, Aldus said.

PrePrint 1.5 now will recognize the widely used DCS (Desktop Color Separation) format, outputting preseparated DCS images on the appropriate plate and letting users save PrePrint files in DCS.

See PrePrint, Page 26

The fine print: Has TrueType met promises?

By Bruce Fraser

Apple made two points when it announced TrueType: The first was that the TrueType font format was technologically superior to PostScript Type 1; the second was that it would be completely compatible with PostScript, so that those who had a large investment in PostScript type libraries need not be concerned.

Now that TrueType has been around for a while, it seems clear that, like many of Apple's announcements, this one has proved to be not so much untrue as incomplete.

TrueType's technological superiority is at best unproven. Its hinting features are certainly equal to those of PostScript Type 1, but after looking at large numbers of fonts rasterized at different sizes, we have to conclude that neither format provides clearly superior results with all fonts at all sizes. Advanced features, such as optical scaling, that were much ballyhooed in the early days following TrueType's announcement have proven chimerical, largely because they have been much more difficult to implement than expected. As one developer put it, "TrueType is cool like assembly language is cool."

See Fonts, Page 28

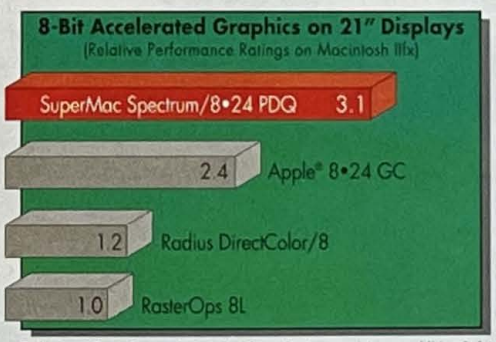
21" SuperMatch™ Two-Page Color Display

Introducing SuperMac's Spectrum/8•24 PDQ. Speed That Will Blow You Away at Just $1,399.*

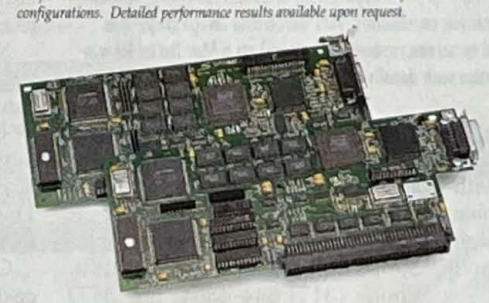
SuperMac™ launches a new era in color graphics on the Macintosh® — workstation-class performance for both 8- and 24-bit graphics from a single SuperMac card!

Spectrum/8•24™ PDQ provides almost twice the 8-bit price/performance of the Apple® 8•24 GC — at a price that's hundreds of dollars less! This performance is the result of SuperMac's latest achievements in driving the innovative edge of chip design — with a graphics accelerator that can move pixels at a sizzling half-billion per second. And Spectrum/8•24 PDQ is fully compatible with Apple's System 7.

Unlock the power of your applications. With Spectrum/8•24 PDQ driving your large-screen 19" or 21" displays, 8-bit color publishing and prepress applications race across the screen. The very same card can also be used to provide 24-bit color on 12" and 13" color displays from Apple.



Radius and RasterOps cards tested with accelerator, requiring an additional slot. RasterOps 8L card does not support 21" displays; data shown for 19" display only. Comparisons based on results as of June 1991, running Potrero™ Graphics Performance Benchmarks. All tests run on a Macintosh IIfx in identical configurations. Detailed performance results available upon request.



For the widest range of design capabilities, Spectrum/8•24 PDQ includes advanced features such as hardware pan and zoom and Virtual Desktop™ of up to an eight-foot-square desktop for working with poster-size projects.

Versatile and value packed. The new Spectrum/8•24 PDQ is now available at your local SuperMac reseller in versions for both the Macintosh IIsi and NuBus Macintosh systems.

For the location of the authorized SuperMac reseller nearest you, call (800) 334-3005.

SUPERMAC™
The SuperSource for Color

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*Price based on Suggested Retail Price and may vary depending upon location.

Alias looks to make name in Mac 3-D

Freeform drawing in Alias Sketch!

By Connie Guglielmo

Las Vegas — Alias Research Inc. is drafting a new drawing program that offers a unique approach to creating 3-D images.

To be introduced at Siggraph '91 here this week, Alias Sketch! — like other Macintosh drawing and illustration programs — lets users freely sketch objects using drawing tools. The added twist is that everything the user draws is automatically a 3-D object, according to Alias.

Features in the $2,000 program, due in the fourth quarter, include:

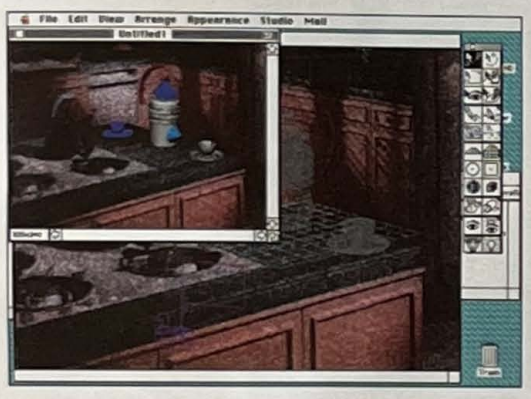
- **3-D tools,** such as a 3-D pencil; a 3-D eraser; and the Curve-o-matic, a tool that lets users draw a curve with any combination of spline curves, arcs or lines. New curves can be joined automatically to existing curves by drawing the new curve near the start of an ending point of existing curves.
- **NURBS,** or Non Uniform Rational B-Spline, technology, which allows users to select any point on a curve and move that point interactively in 3-D to edit the shape of the curve.
- **Idea catalogs** for storing design elements such as shapes, light settings, colors, textures and backdrops.
- **Sketch planes,** which are 2-D planes that serve as a frame of reference (such as backgrounds) for creating and editing 3-D shapes.
- **Animatics,** a flip-book effect that lets users run through the evolution of their design.
- **Rendering,** including wireframe rendering as well as flat, Gouraud and Phong shading.

Other rendering features provided by Alias Sketch! include support for various light sources, texture mapping, shadows, anti-aliasing, and preview and background rendering.

Alias Sketch! can read and write PICT, TIFF and Encapsulated PostScript files.

Alias also announced Version 2.0 of Upfront, its $895 3-D drawing program for architects and interior designers. The new Upfront also will ship in the fourth quarter. Upgrade pricing has not yet been set.

Alias Research Inc. is at 110 Richmond St. E., Toronto, Canada M5C 1P1. Phone (416) 362-0630; fax (416) 362-9181. □



Alias Research's Alias Sketch! lets users define 3-D grids onto rendered images or photographs. Drawn objects placed on those grids are sized automatically for the proper perspective.

The QuickStrip gallery feature of QuickImage 24 Version 2.0 shows up to 25 thumbnail previews of sequentially captured video images. Version 2.0 can capture sequences at up to 10 frames per second.

QuickImage frame grabber adds sequential captures, compression

By Neil McManus

Sunnyvale, Calif. — Mass Microsystems Inc. has announced an upgrade to its QuickImage 24 color video frame-grabber NuBus card that adds JPEG image compression and the ability to make rapid sequential frame captures.

QuickImage 24 Version 2.0, available in September for $695, captures 24-bit color and eight-bit grayscale images from NTSC (National Television System Committee) or PAL (a European video standard) sources such as VTRs, camcorders and videodisc players at speeds up to one-sixtieth of a second.

Version 2.0 can grab sequences into RAM or virtual memory at up to 10 frames per second. A 24-bit-color image captured at a resolution of 640 by 480 pixels requires about 1.2 Mbytes of memory. A new QuickStrip gallery feature lets users preview strips of up to 25 thumbnails of sequentially captured images.

The new version also features software-based JPEG (Joint Photographic Experts Group) compression licensed from Storm Technology Inc. of Palo Alto, Calif. Levels are user-selectable in ratios up to 40-to-1. It supports publish and subscribe, balloon help, and virtual memory.

In addition, Mass Microsystems recently dropped $300 from the price of the current version, 1.6, of QuickImage 24, to $695.

Both versions come bundled with a free copy of Photoshop LE, a subset of Adobe Systems Inc.'s $895 image-editing program. Users can upgrade to the full Photoshop 2.0 for $249. A Photoshop plug-in supplied with QuickImage 24 lets users capture images from within Photoshop.

Mass Microsystems Inc. is at 810 W. Maude Ave., Sunnyvale, Calif. 94086. Phone (408) 522-1200; fax (408) 733-5499. □

AT&T polishes MacTOPAS: 3-D app moves to Mac

By Carolyn Said

Indianapolis — AT&T Graphics Software Labs this month shipped MacTOPAS, a Macintosh version of a widely used 3-D program for IBM PCs and compatibles.

Priced at $7,495, MacTOPAS integrates high-end modeling, rendering and animation functions.

- **Modeling.** The program supplies basic objects, such as spheres, cubes, polygons, circles, rectangles and fonts.

Advanced functions such as extrude, bevel, spiral, lathe, drill and cross-section modeling can be used to evolve these forms into more-complex objects.

In addition, MacTOPAS can create spline models that bend, twist, taper and metamorphose into any object imaginable.

- **Rendering.** Models can be rendered with smooth, flat, Gouraud, Phong or metallic shading.

Other built-in options include texture mapping, reflection mapping, environmental mapping, transparency mapping, multiple light sources and fog.

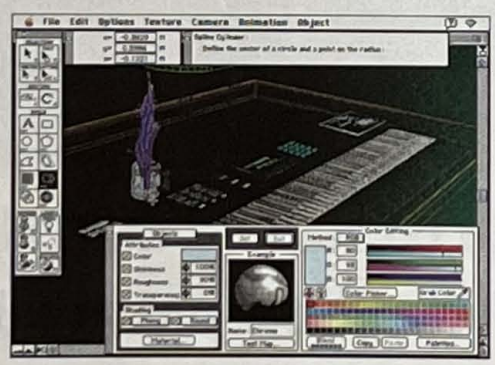
MacTOPAS also will control the intensity and color of lights and can adjust lights to cast soft-edged shadows.

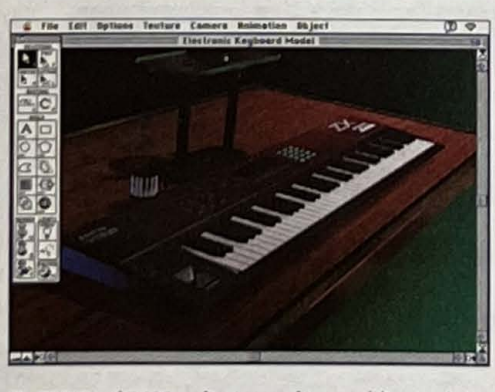
- **Animation.** Keyframe animation gives users complete control of camera moves, lighting, object attributes and motion paths.

Script editing can be done with graphical time-line or time-graphic editors. Special effects such as page curls, page rolls, motion blur and rotoscoping are available.

The program requires a Mac SE/30 or Mac II-series machine with at least 5 Mbytes of RAM and a 40-Mbyte hard drive.

AT&T Graphics Software Labs is at 3520 Commerce Crossing, Suite 300, Indianapolis, Ind. 46240. Phone (317) 844-4364; fax (317) 575-0649. □





MacTOPAS, a $7,495 application, combines modeling, rendering and animation capabilities. This wireframe image (top) was rendered to screen resolution (bottom) on a Mac IIci in 40 minutes. Notice such details as the steam from the cup of coffee.

Color It!

From Page 24

- **Special effects,** such as image masks that will let users blend or feather images together, as well as the ability to flip, rotate, distort, slant and stretch images.

The program also supports multiple Undo and Redo. MicroFrontier said Color It! is System 7-savvy and supports publish and subscribe, balloon help, Apple events, and image previews.

Until Sept. 15, customers can buy Color It! directly from MicroFrontier for $75; owners of other paint programs can buy Color It! for $50.

MicroFrontier Inc. is at 3401 101st St., Suite E, Des Moines, Iowa 50322. Phone (515) 270-8109 or (800) 388-8109; fax (515) 278-6828. □

Aldus lays out new support

By Carolyn Said

Seattle — Aldus Corp. will add some extra oomph to its paid support program by offering users professional design advice in addition to software troubleshooting.

Free memberships in Design Line, a fax-to-fax creative consulting service, will be given to subscribers of the company's CustomerFirst Premier support program, Aldus said.

Subscribers will be able to fax page-layout projects, such as a newsletter, brochure or advertisement, to Invision Inc., a design consulting firm in Needham, Mass. A designer there will evaluate the project and fax back suggestions.

New subscribers to CustomerFirst Premier will receive annual Design Line memberships and a free first design consultation. Subsequent design reviews will cost $45 each. Existing users can get free Design Line memberships when they renew their subscriptions.

CustomerFirst Premier, which costs $179 per product per year, includes toll-free telephone support, a 40 percent discount on new releases and free minor updates.

Aldus Corp. is at 411 First Ave. S., Seattle, Wash. 98104. Phone (206) 628-2320; fax (206) 343-4240. □

PrePrint

From Page 24

A new image-resampling capability automatically creates new data to enhance the sharpness and color of an image that has been resized larger than its original scan.

Other new features include automatic font downloading, expanded file conversion and image linking, improved color calibration, and new proofing capabilities.

PrePrint 1.5 can open and separate PageMaker and FreeHand files directly. It also can be used to color enhance and separate files created in any PostScript-conformant page-layout or graphics application, Aldus said. Version 1.0 owners can upgrade for $30.

Aldus Corp. is at 411 First Ave. S., Seattle, Wash. 98104. Phone (206) 622-5500; fax (206) 343-4240. □

New color scanners capture more for less money

By Dartanyan L. Brown

Roseville, Minn. — Color-scanner options in the less-than-$1,500 range continue to grow with two new 600-dpi entries from Mirror Technologies and Howtek Inc.

▸ **Mirror Technologies** now is shipping the Mirror 600 Color Scanner, a flatbed scanner that uses a three-pass technique to capture RGB (red, green, blue) color information. Available now for $1,397, the Mirror 600 features an 8.5-by-14-inch scanning area and a standard SCSI interface.

The 24-bit scanner will capture 16.7 million colors and 256 levels of gray-scale information.

The Mirror 600, which has a one-year warranty, includes a free copy of Adobe Photoshop LE (Limited Edition). Photoshop LE lacks some features found in the regular $895 version, such as color separations. Mirror 600 purchasers can upgrade to the full Photoshop for $247.

▸ **Howtek** recently shipped its 600-dpi Personal Color Scanner. Software interpolation boosts the $1,295 scanner's native 600-by-300-dpi resolution to 600 by 600 dpi.

The 24-bit scanner features an 8.5-by-14-inch scan area that uses three passes to capture RGB data.

Adobe Photoshop LE is bundled with the Personal Color Scanner. Owners of Howtek's 300-dpi Personal Color Scanners can buy a $25 software upgrade to boost resolution to 600 dpi. The new software also improves image handling, Howtek said.

Mirror Technologies is at 2644 Patton Road, Roseville, Minn. 55113. Phone (612) 633-4450; fax (612) 633-3136.

Howtek Inc. is at 21 Park Ave., Hudson, N.H. 03051. Phone (603) 882-5200; fax (603) 880-3843. □

UMAX color scanners cover both ends

By Dartanyan L. Brown

Santa Clara, Calif. — UMAX Technologies Inc. last month announced two new color scanners for both ends of the pre-press and desktop publishing market.

▸ **The UC12000,** a 30-bit color scanner to ship in September for $5,995, captures RGB (red, green, blue) data in one pass and allows the information to be processed by standard image-editing software.

Using software interpolation, the UC12000's standard 1,200-by-600-dpi resolution can be boosted to 1,200 by 1,200 dpi.

A unique charged coupled device design adopted by UMAX enables the UC12000 to scan with only a single light source and requires only a single pass to scan images. It can scan a full-color letter-size page in less than two minutes, according to the company. A 2-Mbyte buffer improves throughput for handling large color files.

▸ **The UC630,** available now for $1,995, is a 24-bit-color scanner that captures 16.7 million colors and 256 shades of gray. It provides hardware resolution of 600 by 300 dpi, with 600 by 600 dpi available through software interpolation.

Both flatbed scanners can handle images up to 8.5 by 14 inches and come bundled with Adobe Photoshop 2.0.

The UC12000 and UC630 are equipped with SCSI interfaces and require Macs with a minimum of 2 Mbytes of RAM.

UMAX is at 2352 Walsh Ave., Santa Clara, Calif. 95051. Phone (408) 982-0771; fax (408) 982-0776. □

Digital F/X rolls out sequel: Video F/X 2.0 adds formats

By Neil McManus

Mountain View, Calif. — Digital F/X Inc. is shipping Version 2.0 of Video F/X, its on-line video-production system. The new version now supports non-linear editing, A/B roll and PICS animations.

Video F/X 2.0 has optional A/B roll, which lets editors access two videotape decks simultaneously, as well as non-linear editing.

Video F/X 2.0 is a $9,995 hardware and software package that includes a box for controlling video decks, a Nu-Bus board for transferring video images to and from the Mac, and control software (see MacWEEK, April 9).

Owners of the previous version will receive a free software upgrade to Version 2.0.

Non-linear editing allows users to edit, preview and add special effects to digitized video footage in real time. This standard feature of Version 2.0 spares users the time-consuming process of shuttling tape decks in search of frames, the company said.

A/B roll, a $3,000 option for Version 2.0, lets editors access two videotape decks simultaneously. A $1,000 option allows editors to incorporate PICS animations into videos either as separate elements or superimposed over live video.

Digital F/X Inc. is at 755 Ravendale Drive, Mountain View, Calif. 94043. Phone (415) 961-2800; fax (415) 961-6990. □

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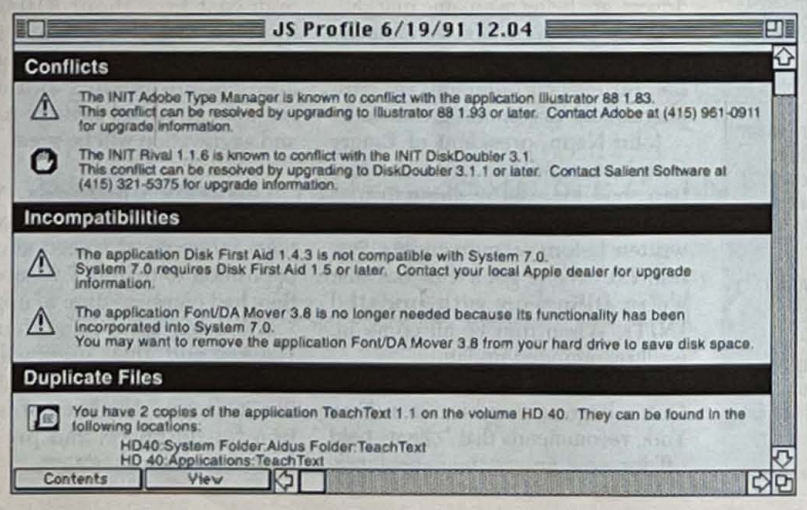
JS Profile 6/19/91 12.04
Conflicts
The INIT Adobe Type Manager is known to conflict with the application Illustrator 88 1.83. This conflict can be resolved by upgrading to Illustrator 88 1.93 or later. Contact Adobe at (415) 961-0911 for upgrade information.
The INIT Rival 1.1.6 is known to conflict with the INIT DiskDoubler 3.1. This conflict can be resolved by upgrading to DiskDoubler 3.1.1 or later. Contact Salient Software at (415) 321-5375 for upgrade information.
Incompatibilities
The application Disk First Aid 1.4.3 is not compatible with System 7.0. System 7.0 requires Disk First Aid 1.5 or later. Contact your local Apple dealer for upgrade information.
The application Font/DA Mover 3.8 is no longer needed because its functionality has been incorporated into System 7.0. You may want to remove the application Font/DA Mover 3.8 from your hard drive to save disk space.
Duplicate Files
You have 2 copies of the application TeachText 1.1 on the volume HD 40. They can be found in the following locations:
HD40:System Folder:Aldus Folder:TeachText
HD 40:Applications:TeachText
Contents
View

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Fonts

From Page 24

Compatible, not interchangeable. TrueType is also compatible with PostScript. Those who interpret "compatible" to mean "interchangeable," however, are in for some rude shocks. While TrueType and Type 1 can coexist on the same system, if you format a document using a TrueType font, then switch to a PostScript Type 1 equivalent, it's quite likely that your line breaks, leading and page breaks will change.

For those who intend to use TrueType exclusively for on-screen display and are printing to a QuickDraw printer, this won't be a problem. Indeed, TrueType has definite advantages over the Type 1-Adobe Type Manager combination. Installation and system integration are easier, and on low-end Macs at least, TrueType is faster. For someone with a Mac Classic and a StyleWriter, TrueType is a real boon.

But TrueType is purely a font technology, while PostScript is a complete page-description language. For users who need PostScript for its graphics capabilities, TrueType is a mixed blessing at best. PostScript has a firm lock on the mid- to high-end publishing market, and PostScript Level 2, with its powerful color capabilities and speed improvements, will almost certainly strengthen that lock. When TrueType is introduced into a PostScript environment — and bear in mind that there's no such thing as a QuickDraw imagesetter — several problems arise.

Formatting differences. First, there's the question of differences in formatting between TrueType and PostScript Type 1 fonts. We've already heard more than one horror story where someone took a TrueType-formatted book, complete with index and table of contents, to a service bureau for final output on an imagesetter, only to find that the page breaks changed dramatically when the imagesetter substituted the PostScript Type 1 font for the TrueType used in the original. This, of course, rendered the index and table of contents useless.

Some applications are more vulnerable to this than others. For example, Microsoft Word and most other word processors calculate their auto-leading from the QuickDraw screen representation rather than from the outline font itself. Since the hinting of the two competing formats can produce quite different results, leading is usually substantially different when you change from one font format to another. High-end page-layout and graphics applications are less vulnerable to this since they calculate leading based on the outline font itself, but right now PageMaker supports TrueType only with the Apple print driver, and QuarkXPress, not at all.

One way to get around this would be to insist that the service bureau use TrueType rather than the PostScript font, but increased print time and driver complications make most service bureaus reluctant to do so.

Printing time. On PostScript printers, TrueType fonts take longer to print than do PostScript Type 1 fonts, and it takes fewer of them to make the printer run out of memory. The reason is that when the LaserWriter driver downloads a TrueType font, it also has to download the TrueType rasterizer. Once the font has been downloaded, the rasterizer is flushed from the printer's memory.

Two penalties ensue. First, it takes time to download the rasterizer with each TrueType font. Second, each time the rasterizer is flushed from memory, most of that memory is reclaimed, so printer memory fragmentation happens faster with TrueType than with PostScript fonts, hastening the appearance of the dreaded "VM-error" message. This is annoying in any PostScript environment, but in a service bureau (where time is money), it's a royal pain.

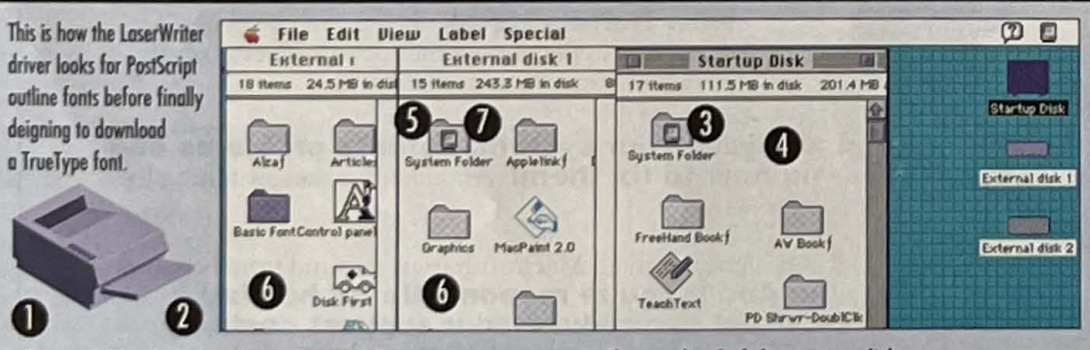
The hunt for TrueType. It's also difficult to persuade a PostScript device to use TrueType in the first place. The LaserWriter driver (which is used by virtually all PostScript printers) searches high and low for a PostScript outline font before downloading the TrueType font (as shown below), and there currently isn't any way to download TrueTypes manually.

Only after failing to find a PostScript outline in any of those places will it use the TrueType font. You can remove PostScript outlines from any of the sensitive locations on the Macintosh. You also can remove them from the printer's hard disk and clear the printer's font cache by turning the printer on and off. But you can't remove them from printer ROM, so the only way to print, say, TrueType Courier on a PostScript printer is to change the name of the font. So far, only one Macintosh application, Letraset's FontStudio, will let you do so.

TrueType-PostScript schism. In short, the font-management issues involved in integrating TrueType into a PostScript environment are far from trivial. Unless and until fixes for these problems are forthcoming, it seems likely that the Mac type market will become increasingly segmented, with TrueType gaining a foothold in low-end applications, while PostScript continues to dominate the mid to high end. □

The long and winding road to TrueType

This is how the LaserWriter driver looks for PostScript outline fonts before finally deigning to download a TrueType font.



1. Printer ROM. If the font is in printer ROM, there's no way to get the printer to use the TrueType font instead, unless you rename the TrueType font to some other font name. Currently, only FontStudio can do this. So you can't, for example, print TrueType Courier or Helvetica on a PostScript printer.

2. Font cache in the printer's RAM or in printer's hard disk. If you download a PostScript outline, then try to print the TrueType version, the printer will simply use the PostScript outline that's still in the font cache. You have to cycle the printer on and off to clear the cache.

3. On start-up disk: Extensions folder (under System 7) or the root level of the current System folder (under System 6). Under System 7, it checks the Extensions folder, then the root level of the System folder.

4. The root level of the start-up disk.

5. On any other mounted volume: Extensions folder (under System 7) or the root level of any other System folder (under System 6). Under System 7, it checks the Extensions folder, then the root level of all System folders on all mounted volumes.

6. The root level of any mounted volume other than the start-up disk.

7. Only after exhausting all these possibilities does the LaserWriter driver download the TrueType font and rasterizer from a TrueType installed in the current system or a TrueType opened with Suitcase II.

KEVIN BERGER

RICK FRIEDMAN/BLACK STAR

Like many high-end pre-press users, Michael Sullivan of Imprimatur Design Systems Inc. has an ambivalent attitude toward System 7. On the one hand, he said, his company is eager to upgrade; on the other hand, it is compelled to wait until applications and INITs are upgraded to be compatible.

Pre-press pros cautious on 7.0; compatibility remains an issue

By Steve Hannaford

A mixture of enthusiasm and caution characterizes many pre-press users' reactions to System 7.0. A quick survey of graphic arts consultants and service-bureau managers indicates that many graphic arts sites are experimenting with System 7.0, but few have committed to it fully.

"We can hardly wait until we can update to System 7.0," said Michael Sullivan, president of Imprimatur Design Systems Inc. of Cambridge, Mass. "But we aren't going to do it until all the applications and Startup documents (INITs) we use are upgraded to be fully compatible."

Even developers are cautious. Linotype-Hell Corp. of Hauppauge, N.Y., officially supports System 7.0, but it recommends using earlier versions in production environments, because it has not yet checked all possible configurations for problems.

Wait and see. Many consultants have been advising caution to their clients. Gary Hawkey, head of Hawkey & Associates Inc. of Chicago, the consulting arm of Wace USA (formerly Techtron), the nation's largest printing and pre-press consortium, is typical. "We haven't recommended that anyone switch yet, but we will be ready to [switch] within the next 30 days," he said. Hawkey added that he thinks the remaining obstacles, such as compatible System extensions, network drivers and disk drivers, are being overcome quickly.

Since pre-press houses typically have more devices than the average site, drivers and extensions for peripherals such as scanners are an issue.

John Napp, president of Binary Graphics, a Seattle print production consulting and training firm, is waiting until new extensions are written before recommending System 7.0. "We've got a shoe box that we're filling up with updated INITs. When they've all come in, we'll recommend updating."

Bob Schaffel, manager of SprintOut, a large service bureau in New York, recommends that "clients hold off for now unless they absolutely have to have the look and feel. There's no real reason to switch until applications make use of System 7.0 features beyond balloon help."

Potential pitfalls and gains. System 7.0 carries several perils, some serious and some humorous, for the graphic arts user. Steve Manousos, head of Aptos Post Inc., a service bureau in Aptos, Calif., said: "We had a file from one System 7.0 customer that we simply could not open. We used ResEdit to find out what it was. It turned out that the customer had sent us the (3-Kbyte) alias file instead of the real job file."

Manousos also reported jobs being ruined by TrueType fonts inserted in the midst of PostScript documents. The use of TrueType, incidentally, was opposed by every consultant and service-bureau owner interviewed.

Not all consultants are negative about System 7.0, however. Vince DiPaola of DiPaola Associates in Guilford, Conn., has set up three corporate art departments to run on the new OS and is aggressively working to upgrade others.

"The major single advantage is access to RAM," DiPaola said. "Many of our clients have 64-Mbyte machines; the smallest machine is 20 Mbytes."

One concern is the cost of a systemwide upgrade. Imprimatur Design's Sullivan estimated that it may cost him about $10,000 to upgrade the seven Macs in his company to System 7.0, between application updates and added memory, but the savings in time and aggravation will be great.

Leisurely upgrades. While none of the managers and consultants interviewed voiced any deep opposition to System 7.0, most said they had plenty of time to upgrade.

Although there is no doubt, as Hawkey said, that "users will have to live with System 7 eventually, like it or not," the pace of adaptation for designers and pre-press houses remains slow. □

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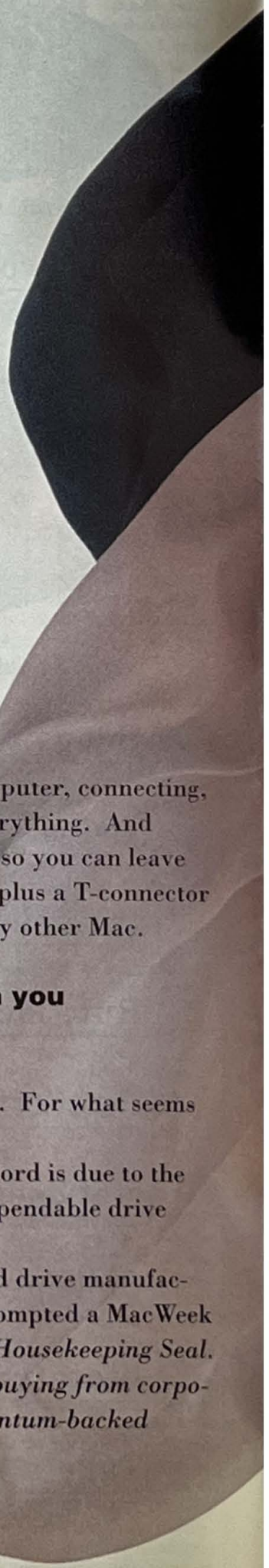

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EDITORIAL

When bigger is not better

Ask most Mac users why they prefer Apple's machines, and you'll probably hear some variation of the three I's: intelligent design, intuitive look and feel, and innovative programs.

Apple provides the first two elements in the Mac's system software, while third parties strive to deliver that third critical aspect, innovation. In general, smaller developers have been the ones to deliver innovative technology. That fact makes the growing number of third-party mergers all the more distressing for users.

Perhaps smaller developers tend to attract more creative software engineers. Maybe smaller developers can be more focused on product development than large, bureaucratic companies. But corporate users tend to place nearly as great an emphasis on a developer's ability to support a product as on that product's features. Unfortunately, this creates a Catch-22: Developers cannot grow if customers do not buy. For fiscal survival, many small developers must submit to acquisition.

So we have fewer companies working on innovative products. This past month, for example, we have seen the announced merger of Paracomp Inc. with MacroMind Inc., the buyout of Ashton-Tate Corp. by Borland International Inc. and the acquisition of Softview Inc. by ChipSoft Inc. This consolidation could result in fewer products from which to choose.

But this stranglehold on innovation does not have to be inevitable. Start-ups receive their primary funding through venture capital. But venture capital has its risks. Companies that fail to make enough return on investment often are led to the auction block by their investors.

Imagine an entirely new concept in funding. What if the largest Mac developers pooled a portion of their R&D money into a venture fund? For a fraction of what they spend on acquisitions, they could ensure a flow of creativity.

While this scenario is a long way from current methods of doing business, it holds promise for all parties. Larger companies could have access to the technology their funds helped develop. Smaller companies could afford to focus on innovation. And users could have more options. □

3 years ago in MacWEEK

Jan. 19, 1988: " ... Fortified by Apple's endorsement, Aldus Corp. last week marched into the Macintosh desktop presentations market with ... Persuasion."

In retrospect: Persuasion and similar programs have earned a place on many Mac desktops, but the whole presentation market has fallen short of early high hopes.

Letters

Digitalk user mystified by disappearing update

There's something wrong at Digitalk Inc. and maybe at MacWEEK as well. I'm referring to the story stating that Digitalk has released a new royalty-free and System 7.0-compatible version, 1.2, of its SmallTalk/V Macintosh (MacWEEK, July 16). A similar item appeared in PC Week, your sister publication.

In light of your story, I bought a copy of the environment for use in the development of a new application. When I discovered that my reseller had sent me Version 1.1, I called Digitalk to determine if I would have the pleasure of coughing up a $75 upgrade fee.

After a distressing amount of confusion, I was told that the current release level remains 1.1 and that the company does not yet have an upgrade policy because no date has been set for distribution of the new version. What is going on?

I rely on MacWEEK for the proverbial "timely and accurate" information about Macintosh products. At the very least, the allegedly professional Digitalk should be censured by your publication for resorting to archetypal vaporware tactics.

It also seems to me that you might want to indulge in a little of what is known in the journalism profession as fact checking before obligingly committing press releases to paper. Or maybe your only concern is column inches.

Rory Lydon
New York

First, thanks for taking the time to express your thoughts in writing. The story was accurate at the time it was written. Subsequently, the company found a bug in Version 1.2 and halted shipment. A Digitalk official has informed us that free upgrades will be available to customers who purchased earlier versions after June 1.

At the risk of further inflaming your passions, may we report that Digitalk hopes to begin shipments of the corrected Version 1.2 this week, although after extensive investigation, we are unable to verify the accuracy of the company's statement. — Ed.

Reader ready to help Knife with hard words

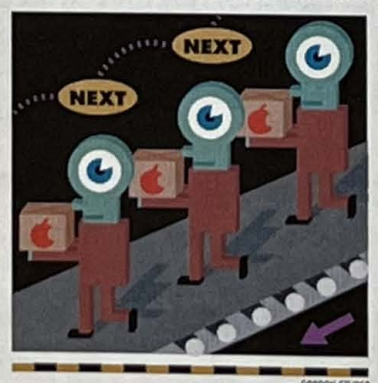
Regarding the Mac the Knife column concerning Apple's recent trademark applications (MacWEEK, July 16), which of the "technogarble" words in the Apple trademark Scientist's Workbench does he not understand? Is it "scientist"? That's a tough one. Or, perhaps, is it the multisyllabic word "workbench"? If the Knife will contact me I'll happily define each of these difficult English words for him.

Robert S. Wolff
Advanced Technology Group
Apple
Cupertino, Calif.

Death of a dealer IV: Apple and the superstore

Regarding your story about Apple and its dealers (MacWEEK, July 16), I completely and wholeheartedly agree with John Crow's position on Apple's treatment of the dealer channel.

For the last year or so, Apple has come up with several programs apparently designed to dramatically increase market share at the expense of the existing dealer channel. This, despite the fact that it's the current dealer channel that has



GORDON STUDER

been Apple's partner in its struggle to transform itself from a mere curiosity in the personal computer industry to a recognized force with which to be reckoned.

Judging from Apple's recent moves, we are very near the day when dealers can safely pink slip support people and replace them with sales people who are in reality only order takers.

Those who think that this can't happen are only kidding themselves. If Apple continues down the current path, concerned only with market share and short-term profits, the dealer channel as most of us know it will cease to exist. The superstores Apple seems to now favor will merely "push boxes." As a result, support

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Letters

From Page 32

will go down the tubes. No more calls to the local dealer, who will be too busy pushing the next box to provide support. Only those with access to a 900 telephone number and an active credit card need ask for help.

Darrien R. Woods
senior systems engineer
Metropolitan Connecting Point Computer Center
Richardson, Texas

Font manufacturers should face up to desktop competition

I strongly disagree with some of the perspectives in the story about the legal issues presented by the new font-conversion utilities (MacWEEK, June 11).

The call for special legislation regarding digital typefaces is ludicrous and, I suspect, unconstitutional. Tools for such conversions have been around for years, yet we haven't seen the kind of pirating you described.

An international convention on copyright in Vienna decided that general printing typefaces are not copyrightable material. This decision will benefit users. In Japan, for example, two typesetter makers have dominated the market for years. Now, thanks in no small part to technology first generally available on the Macintosh, that might be changing. The two are attempting to block the spread of desktop publishing by not releasing their typefaces; they may well ruin themselves in the process.

On the Macintosh, we currently have just two PostScript Japanese faces in general use — no bold, no italic. And they are not Adobe Type Manager-based but printer-specific.

Here in Japan, the concept of the alphabet not remaining the property of the people has demonstrable affects. The idea that any one person can own something as basic as the alphabet, in any shape or form, is immoral.

Richard Northcott
HeadLock Software
Tokyo

Bruce Fraser replies: I have difficulty relating your complaints to anything I wrote in the aforementioned article, but for the record, I stand behind the facts contained therein concerning the current state of copyright law pertaining to fonts and the seriousness of my intent in doing so. To answer your specific points:

The tools we were discussing have appeared only in the past few months. The TrueType format itself is less than two years old. Hinting is totally irrelevant to the performance of a font on film at higher resolutions— it improves the appearance of fonts when they are printed at low resolutions of 300 dpi or less. You may feel the call for additional legal protection for digital typeface design is ludicrous: I didn't make the call, I only reported that the major font vendors are indeed pursuing such a remedy. Your beef is with them, not me.

You are correct about the current non-copyright status of the letterforms themselves, but you miss the point that they may be patentable, for example, and you also miss the point that Macintosh fonts are computer programs, which are indeed copyrightable.

No one, least of all myself, is talking about copyrighting the alphabet, although my reading of the Constitution fails to reveal any reference to the alphabet at all. Finally, one of the main reasons that you have only two kanji typefaces in general use is precisely because they lack legal protection. Like most other people, type designers like to get paid for their labor, and until they have some reasonable assurance that their kanji typefaces will be profitable, they are unlikely to invest the time and hard work necessary to create them.

Radius Rocket writer rails on rewrites in letters column

Thank you for publishing my recent letter (MacWEEK, July 17) concerning your review of the Radius Rocket. Out of curiosity, are all letters so drastically rewritten before printing? I was able to recognize very little of my original language, although my basic ideas were fairly presented.

I understand the need to shorten my letter and to edit where my constructions are especially awkward, but isn't a letters column the place where readers are allowed to express themselves, themselves?

Also, my first name is actually James.

James Bradley
Los Angeles

We regret dropping the ball with your first name. Most publications, including MacWEEK, edit letters both for clarity and length. If space requirements require drastic pruning, there is a very good chance that entire paragraphs will undergo substantial editing, as was the case with your letter. — Ed.

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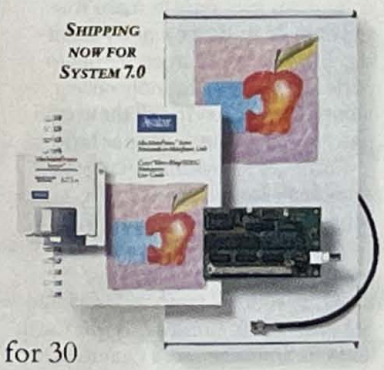

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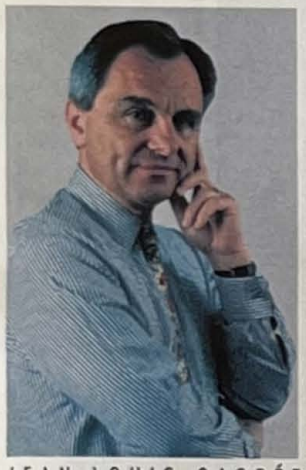


JEAN-LOUIS GASSÉE

For the networks of the future to prosper, phone companies must replace analog with digital technologies.

Commentary

Changing the world, one byte at a time

For many years, only users at large corporate sites have had direct access to a huge, sophisticated, well-maintained, cost-effective digital phone network. That holy of holies — a completely digital phone network — is virtually inaccessible to the unwashed masses of personal computer users.

So why can't the phone companies give all personal computer users direct digital access to the wealth of resources in their networks now? The delay is probably the result of regulatory factors, cultural limitations and some bias in estimating the return on making the required investments.

The long way home. Someday the phone companies will wake up and become network companies, but before that can happen, the current local loop at each end of the phone connection must be eliminated. When information reaches the loop, which ties the customer to the central switching office, it has to be translated from the digital into the analog domain and back again.

Two important losses occur as a result of these mindless transformations — losses of throughput and meaning. The limitations of the analog link reduce performance. Higher-performance modems and exotic modulation schemes are an expensive and incomplete way to compensate for the built-in limitations of the local analog loop.

No less important is the loss of meaning that occurs as a result of this passage in the analog domain. The network loses some of its ability to respond to the contents of what it carries because at the central office, the process that digitizes the analog modulation coming from your computer modem does not differentiate between your computer and its master's voice.

Since the phone companies can offer a global, ubiquitous digital network, the possibilities are tempting. For instance, imagine that LAN-bridging services become standard fare. You have your LAN in the office, connecting computers, servers and printers. The phone company doesn't try to replace that system, even if it uses phone wiring in the building. Now, if you want to connect to a branch office across the country (and perhaps in Europe and Asia as well), the phone company offers on-demand LAN bridging that is as easy as pointing and clicking. And you pay only for what you consume — the bytes transported. You don't need to maintain your network any more than you maintain the phone system connecting you to your mother.

Throwing out a line. This system would not just transform the way we build and use LANs; it would have many other uses. On-line information services such as Lexis and CompuServe would not have to make do with low-speed terminal emulations. They could economically be made to appear as a server on your desktop, with a point-and-click user interface, as opposed to the confusing, boring hierarchies of menus and arcane query formulations.

The move away from terminal emulation would apply to MCI mail and its siblings, too: Nothing would prevent them from having an even nicer user interface or bringing your mail to your desktop without you having to ask for it.

For phone companies to become network companies, they'll need more than time. They have to limit themselves to the role of common carrier and to related activities in the service of that role. In particular, they must focus on the task of building and running networks rather than using their position to prevent entrepreneurs from successfully building value-added businesses.

Just like the personal computer industry, in which the more creative application software and add-on hardware is almost never produced by the large manufacturers, the telephone companies don't stand much of a chance of producing the more interesting software or add-on hardware using the network platform.

Everyone's a winner. The situation with voice mail illustrates what we must not allow to happen with network services: Local phone companies now underprice third-party businesses with services that are, at best, unimaginative, and therefore not likely to maximize consumption. Instead, they should concentrate on providing better pipes and exciting entrepreneurs into creating attractive services that will increase traffic a lot more than their sedate and inevitably incestuous thinking would allow. And they'd have the easy and pleasant task of watching the meters run faster. □

MacTOON

"I guess the Mac evangelists got here first."

The Mac Manager

Building new apps using Apple events

In the last issue I discussed the issue of aging Mac managers and their staff. The problem this will spawn — short-term memory loss and its effect on using complicated software — is as much a technological problem as a management one.

But Apple now offers a technology in System 7.0 that could help managers deal with the problem.

Apple events to the rescue. Suppose you have some staffers who produce marketing forecasts. This task probably requires the use of sophisticated data-query, analysis and reporting tools on the Mac.

Even for someone with a photographic memory, the steps, tasks and commands necessary to make the software do its dance can be daunting. Imagine your forecaster has to perform this task, say, only once a month. Remembering all these complex steps becomes a greater burden.

Fortunately, System 7.0 provides some tools for a technology fix. Apple events, with its ability to let applications talk to and control each other, is that technology. User scripting systems (such as UserLand Software Inc.'s Frontier, HyperCard and CE Software Inc.'s QuicKeys) that control Apple events are the specific tools the manager will use.

More than application glue. Apple events, with the aid of these user scripting environments, will let Mac managers get around their graying staff problems by providing the methods to build customized yet simple applications.

Although plenty has already been written about using Apple events to temporarily glue together some applications for quick-and-dirty jobs, not much has been made of Apple events' more robust capabilities of longer-term application creation.

Consider our marketing forecast example. Suppose that instead of requiring your marketing analyst to slog through a series of manual steps to retrieve, analyze, interpret and present data, you could build a custom application that did all that from the desktop menu bar. Apple events and user scripting give you that power. Apple events lets you make the machine do the memory-intensive scut work, instead of the user.

The beauty of an Apple events application is that it won't require the time of expensive programmers to create, and it can be maintained and modified by the Mac managers and their staffers who will use it. This will be the key to Apple events' success with Mac managers. Neither managers nor their users have the time or inclination to learn to write custom software the old-fashioned way.

Apple-events scripting will let them bypass that process by taking existing building blocks (in the form of applications they already have that are interapplication communications-aware) and assembling them to meet their needs.

This roll-your-own customization process doesn't need to be limited to the aging problem. But it does give Mac managers a great reason to sit down with Apple events and get the technology clear in their minds.

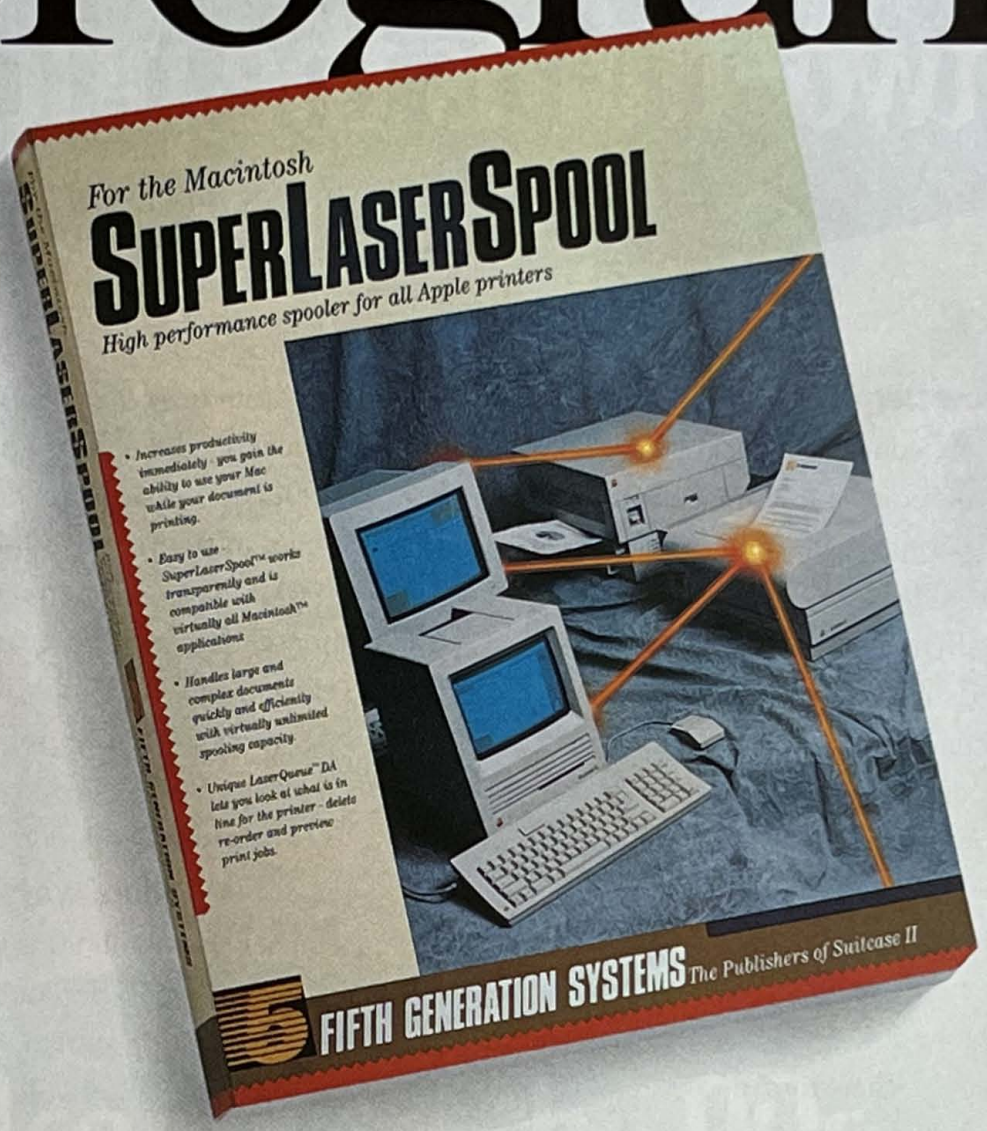
Eventually, software companies will start producing application modules that are meant to be incorporated with Apple events into user-customized applications. As easy as a scripting environment might make the process now, it will pale in comparison with scripts controlling communications, spreadsheet, drawing and word processing modules that have been specifically designed for Apple events.

DON CRABB

Over the next few years, this IAC-derived process will help spark a renaissance in software development because the development tools have been placed in the hands of their ultimate users.

Managing the problem now. The future is all well and good, of course. And subject to change. But what won't change is that the tools that Apple has made possible with System 7.0's Apple-events core technology are coming on-line now. If you want to get a grip on your staff aging problems, Apple has shown you the way. Today. □

Wait loss program.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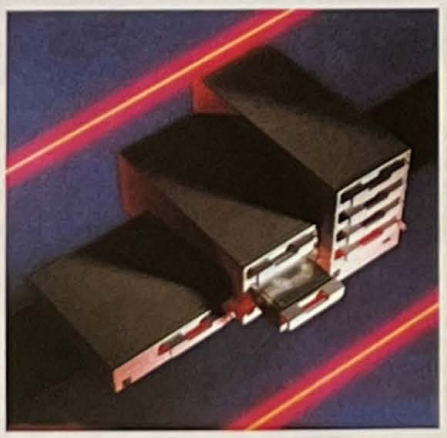

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Reviews

- MacDraw Pro. See Page 44.
- GraceLAN 2.0. See Page 44.
- CD-ROM drives. See Page 50.
- MacroMind Director 3.0. See Page 57.
- Carbon Copy Mac 2.0. See Page 60.

MacroMind rounds out animation

Three-D mixes video, rendering, animation

By Michael Murie

MacroMind Inc.'s Three-D is a new rendering, animation and video production package from the company known for animation and multimedia products.

Three-D is actually three separate applications — RenderWorks, 3DWorks and FireWorks — that provide rendering, animation, and compositing and video control, respectively.

SCORE CARD

MacroMind Three-D

MacWEEK

Overall value	●
Performance	●
Features	●
Ease of use	●
Documentation/support	●
List price	$1,495

● Excellent ● Very good ● Good ◉ Average ○ Below average

ON BALANCE

MacroMind Three-D
MacroMind Inc.

MacWEEK

MacroMind Three-D is an animation and rendering package with a sophisticated and complex keyframe animation score. The renderer offers only basic geometric primitives; serious users also will require a modeling program, and the renderer does not support ray tracing. Three-D text can be created using TrueType fonts. If animation is your main concern, Three-D is excellent; otherwise its price is high compared with competing products.

SYSTEM 7 COMPATIBILITY

MacroMind Three-D	
Balloon help	No
TrueType	Yes
Publish and subscribe	No
Apple events	No
32-bit addressing*	Yes

*According to vendor

Installation and hardware. Three-D is supplied as an intimidating collection of 16 compressed disks that expand to about 18 Mbytes comprising 2 Mbytes of application files, 4 Mbytes of surface libraries, and 12 Mbytes of tutorials and examples. When Three-D uses the surface libraries, it creates work files (called filter files) that are about three times the size of the originals. While these can be removed manually after they are used in the rendering, there must be enough space available to create them. You should have at least 40 Mbytes free before considering installing this product. Three-D requires a 68030 Mac running System 6.0.5 or greater and at least 5 Mbytes of RAM.

Animation. 3DWorks is primarily an animation tool and does not create models. It does provide some basic geometric shapes (such as sphere and parabola) and can create 3-D text from TrueType typefaces, but for complex shapes, such as a car, a modeler is required. 3DWorks will read 3DGF (3-D Geometry File) and Paracomp Inc.'s Swivel 3D files directly; a utility called ModelMover is provided for converting DXF (Drawing Interchange Format), IGES (Initial Graphic Exchange Specification), Byte by Byte Corp.'s Sculpt 3D and Aldus Corp.'s Super 3D models to 3DGF format.

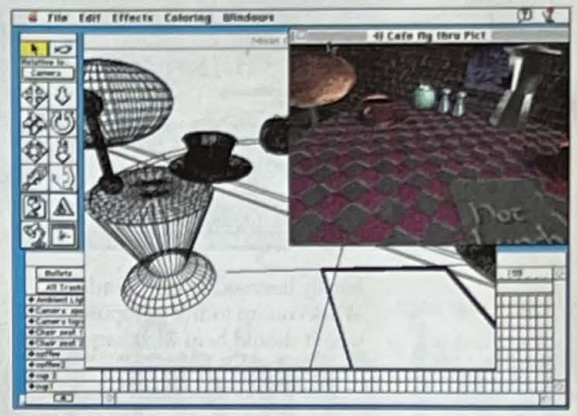
When a new animation is created, a default window looks into the 3-D space that will be rendered. All views of this space require that you position a camera aimed at that space. As many cameras as desired can be added. The Four View menu option creates top, side, front and perspective camera views automatically. On a 13-inch monitor we found it most efficient to work with only two or three views — the camera view and two others for checking object placement.

Scaling, rotation and movement. Once objects are imported or created, they can be scaled, rotated and moved within the 3-D space. Surfaces are applied through the Shading information window. Here the color is assigned and opacity and reflectivity are defined by five sliders that vary the characteristics of the surface. A pop-up menu offers five surface types. RenderWorks supports polygon (which colors each polygon of a shape with a single color), Gouraud and Phong shading. Polygon takes the least time, while Phong creates the most realistic image. RenderWorks does not support ray tracing; however, it is possible to use Pixar's MacRenderMan to render images if desired.

PICT or PICS files can be used as Texture, Bump or Reflection maps, adding surface detail, depth and reflections on the surface. A slider adjusts the density of the surface applied, while pop-up menus define how the 2-D image is mapped to the 3-D surface. The image is always sized to fit the object, using a default orientation, although it is possible to change these parameters through the Score window.

Parents and children. Three-D supports a hierarchical parenting structure. Children inherit the characteristics of parents. Cameras can even be attached to an object.

Once surfaces and the hierarchy are established, it is time to create animation. You can edit the hierarchy and change surfaces at any time, but it goes much easier if you set everything up correctly first.



3DWorks displays a wireframe representation of a scene, as well as a rendered frame. The tool palette provides tools for moving, lighting and controlling the scene.

Complete animation. Animation is created as a series of keyframes in a score. 3DWorks' score is the most complete (and complex) implementation of keyframe animation we have seen yet — little surprise, given MacroMind's flagship product, Director (see review, Page 57). In default mode, each object has a channel (horizontal row) in the score, with vertical rows indicating frames. You can expand the score to show the key operators to the object (its translation, rotation, scaling and surface properties) and clicking on these shows the changes in these properties. It also is possible to view the numeric values and change them like a spreadsheet. Double-clicking on some channels brings up a dialog that can be used to change the values, but this feature is inconsistent — orientation does this, but position does not.

Graphing movement. The graphing function graphs the movement of an object over time

See Three-D, next page

Symantec integrated app shoots for the Works

By Dale Coleman

The enduring success of Microsoft Works indicates that there is a continuing demand for integrated software by a large number of users. This demand has increased with the advent of the Mac Classic, LC and IIsi.

Users and managers alike now have a choice when it comes time to select an integrated software package. Symantec Corp.'s GreatWorks, which recently began shipping, consists of eight applications or modules for outlining, word processing, file management, spreadsheet, charting, painting, drawing and communications.

GreatWorks is a significantly more feature-rich product than Microsoft Works 2.0, which has not had a major upgrade since its introduction three years ago (see MacWEEK, Dec. 6, 1988). Although Works does have some useful features that are not available in GreatWorks, the individual GreatWorks modules are more robust and generally more accessible to the novice. GreatWorks also distinguishes itself with a number of capabilities not available in Works, most notably its full-featured outline and paint modules.

GreatWorks uses Claris Corp.'s XTND technology, which allows it to share documents with other applications. The program includes translators licensed from Claris for most popular Mac applications and file formats.

SCORE CARD

GreatWorks

MacWEEK

Overall value	●
Performance	◉
Features	●
Ease of use	●
Documentation/support	●
List price	$299

● Excellent ● Very good ● Good ◉ Average ○ Below average

ON BALANCE

GreatWorks
Symantec Corp.

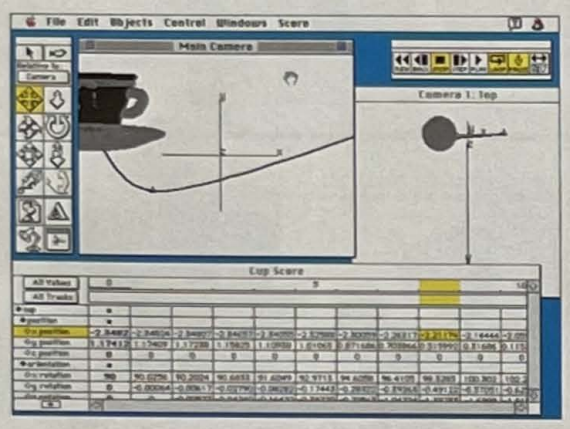
MacWEEK

GreatWorks is a set of eight integrated applications for word processing, data-management, graphics and communications tasks that share common features, including style sheets, a spelling checker and a thesaurus. Most users will need to give GreatWorks a memory partition of 1.5 Mbytes for acceptable performance, but its rich feature set, including XTND file translators, make GreatWorks more attractive than the aging Microsoft Works.

Tied to the core. Except for the Communications module, the GreatWorks modules share a kernel of functionality Symantec calls CORE (COoperative REsource) Technologies, so the included features work identically in each module. Text retains formatting when documents are exchanged among the modules, and the spelling checker and thesaurus work in the same manner when used in the Database or Draw module. GreatWorks includes the Spell Finder spelling checker (with a 100,000-word dictionary) and the Word Finder thesaurus from Microlytics Inc. Database form-design tasks use the Draw module's tools.

GreatWorks runs on all Macs with 2 Mbytes of memory or more.

See GreatWorks, next page



MacroMind Three-D has a complete animation module, which is controlled by the score. Each cell in the score represents a frame in the animation. The path of movement of an object can be smoothed between discrete points using the Tweening function.

Three-D

From previous page

in each dimension. The changes are plotted as a curve on a chart. Small triangles indicate the values at each keyframe, and these can be dragged around to alter the path of the animation. The graph tends to use the minimum and maximum values of the current movement as extreme values. This makes it seem like the object is moving the same amount in all dimensions (but comparing the scale shows that it is moving mostly in one dimension). It also makes it difficult to move the object outside that range.

The Tweening function helps create realistic animation similar to the Tweening function in MacroMind Director. A series of keyframes can be selected and the path smoothed so that the object follows a curve rather than a simple straight line between each position, and Accelerate and Decelerate make the movement of objects more realistic.

Movement of objects can even be defined by mathematical formulas in the score.

Other features. You can point the camera at an object and the Position At feature moves an object to the location of an existing object. Render Selection will render only a defined area of the image. It also is possible to change the shape of an object (a bowl to a wine glass, for example) with the Morph command.

Rendering at work. RenderWorks can render either a single image or a series of frames. When running under System 7.0's Finder or MultiFinder, Three-D links to RenderWorks, but a script can be written to disk that is then executed by RenderWorks — or alternatively a RIB (RenderMan Interface Bytestream) format file can be written for rendering by MacRenderMan. While RenderWorks requires only 2 Mbytes of RAM, we quickly had to increase this to 3 Mbytes and then 4 Mbytes. The program is reasonably fast, providing there's enough RAM to generate the whole image in one pass, and it will run in the background. We had some minor problems when running other programs — the linking between RenderWorks, 3DWorks and FireWorks seemed to get lost — but this was more annoying than disastrous. Users are legally licensed to run RenderWorks on up to five computers, which should help with large projects and tight deadlines.

FireWorks provides digital compositing features to combine two or more images into a final scene.

Images are combined either as a percentage of each other, or if one file has an alpha channel, then that can be used to define the composition of the final image. RenderWorks creates alpha channels, so it is possible to render an object and then place it on top of a background. This saves rendering time, and FireWorks even will combine a PICS file (a series of images) with another PICS file, or a single PICT file. FireWorks will output a PICS or PICT file and also can control a videotape machine using a Diaquest controller.

We had few problems using FireWorks, although it sometimes lost the location of the surfaces that we had applied to an object. The dialog would say only that it couldn't find a file — it did not tell you the file name.

We also had some erroneous polygons when rendering TrueType objects from some public-domain fonts. These didn't prevent completion of the scene, however.

The MacroMind Accelerator is included in the package for playing back the PICS animation files created by Three-D.

Documentation. MacroMind Three-D comes with a comprehensive manual and a huge collection of demonstration files. We would have liked a step-by-step tutorial because the demonstration files, while giving a good idea of what can be done, don't really show how to use the more complex features.

Conclusions. Overall, we were impressed by the capabilities of the program. Features that stand out include Score; Tweening; and easy-to-use Parent linking, Point At and Position At functions. The 3-D text from TrueType fonts and the compositing feature of FireWorks are also good. Support for MacRenderMan is also something to consider. On the down side, for all but simple logo animation, you'll also need a modeling program.

MacroMind Inc. is at 410 Townsend St., Suite 408, San Francisco, Calif. 94107. Phone (415) 442-0200; fax (415) 442-0190. □

GreatWorks

From previous page

We found that the default MultiFinder partition size of 1 Mbyte must be increased to 1.5 Mbytes or 2 Mbytes to work with more than two or three small, simple documents. The Chart module, in particular, tends to demand a large chunk of assigned memory. As a result, Macs running MultiFinder or System 7.0 should have at least 4 Mbytes of RAM to tackle any major tasks with GreatWorks.

Doing the Write thing. Write, the word processing module, is a pleasant surprise. Deciding which word processing features to include in a product with modest word processing pretensions is a mysterious and controversial art. The GreatWorks Write module includes most of the basics, as well as a couple of nifty features not available elsewhere.

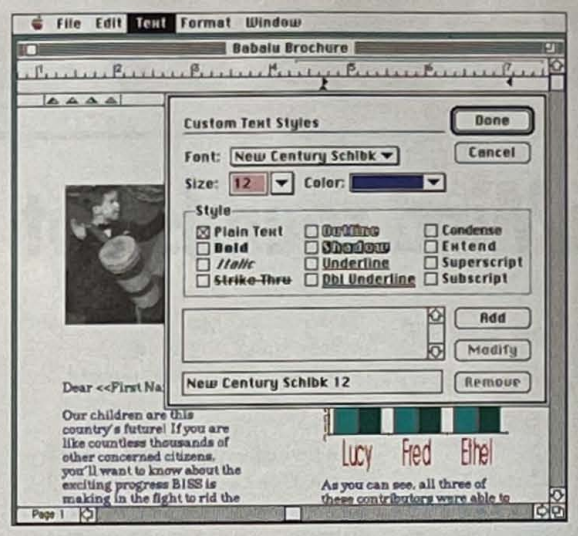
Notable features include settings for left and right pages, user-defined text styles, headers and footers, and multiple columns. The lack of a print-preview feature is compensated for by the fact that the screen display is WYSIWYG. One omission is that no document statistics are given.

GreatWorks' Outline module offers many features normally found only in stand-alone products. Flexible text formatting for outline levels and the ability to include graphics in an outline add to its utility as a document-creation tool. GreatWorks can read Symmetry Corp.'s Acta 3.0 files and read and write Symantec's MORE 2.x and 3.x files.

Keeping things simple. The Database module is a simple file manager that is very similar to early versions of Claris' FileMaker, both in terms of the user interface and the overall design of the database engine. Text stored in a GreatWorks database file is indexed automatically; the same Find/Replace command used to search for text in Write is used to locate records. Picture, calculation and summary are among the field types supported.

The Spreadsheet and Chart modules break no new ground but also lack no critical features. In another example of interapplication integration, the more than 100 Spreadsheet functions are shared with Database. Microsoft Excel and Works translators are included. The 2-D charts are based on Spreadsheet data and can be updated if the source data in a worksheet changes.

While serviceable, the Draw and Paint modules are not trendsetters, either. Draw contains all the tools and features you would expect to find in a basic drawing program but little more. The utility of the Draw tools is enhanced by their availability as Database form-design tools. Paint is a black-and-white paint application for the rare occasions when you would need one.



Symantec's GreatWorks word processing module, Write, is rich in features and includes custom text styles that are available in other modules, mail-merge capabilities, settings for multiple columns of text, and color support.

The Communications module is less tightly integrated into the rest of GreatWorks; it doesn't share the Text menu item with the other modules. As a no-frills Macintosh telecommunications application, however, it is well-designed. Users familiar with the basics of communications will find it accessible, thanks mainly to its interface. Terminal emulation includes TTY, DEC VT-52 and VT-102. File transfers include XMODEM, XMODEM Binary and text. The specific setup for each computer you call is saved in its own GreatWorks Communications document. Communications uses Apple's Communications Toolbox, so additional terminal emulations and file-transfer protocols can be added as they are available.

Rough edges. GreatWorks suffers from poor memory management; most of the problems occur in Chart. We were able to open a complex 121-page Write document in a 1-Mbyte GreatWorks partition, but with a simple Chart document, we were occasionally unable to copy to the Clipboard without running out of memory when running in a 1-Mbyte partition with three other open documents. The low-memory alert box sometimes appears twice successively when one appearance certainly would serve the purpose.

Aside from these memory-related problems, performance is very good. At press time, Symantec was preparing to release Version 1.0.1, a free upgrade designed primarily to fix minor bugs in Database, according to the company.

Other aspects of GreatWorks could use some polishing. While many error messages are excellent, some error messages convey information that is undoubtedly quite illuminating to software engineers but verges on cryptic for the average user. If, for example, you use Chart's Update Data command without first opening the associated worksheet, GreatWorks dutifully announces that an error has occurred and even gives the number of the error. A simple statement about the futility of trying to access unopened worksheets would suffice. Of course, the dreamers among us might go so far as to suggest dimming the Update Data command when the needed worksheet isn't open, but then no one product can please everyone.

Documentation and support. The documentation is well-organized and well-written; it makes for a good read, whether you want to know everything about GreatWorks or just want to understand how a specific module works. There is no command-reference section, although this information is readily available in the on-line help system. The major problem with the documentation is the lack of product specifications, such as the maximum number of characters permitted in a database field.

The help system under System 6 is very similar to that found in Claris products; it uses Symmetry Software Corp.'s HyperEngine technology. GreatWorks can use balloon help when running under System 7.0.

Technical support is available via a toll call during normal Eastern Standard Time business hours.

Conclusions. Is GreatWorks the right product? Is it better than Works? By design, none of the modules offer the depth of features found even in entry-level stand-alone products. GreatWorks needs a memory partition of at least 1.5 Mbytes, preferably larger, to ensure acceptable performance. Given that qualification, GreatWorks is clearly superior to Works for those who need the advantages of integrated software and for whom the genre's inherent limitations are of little or no concern.

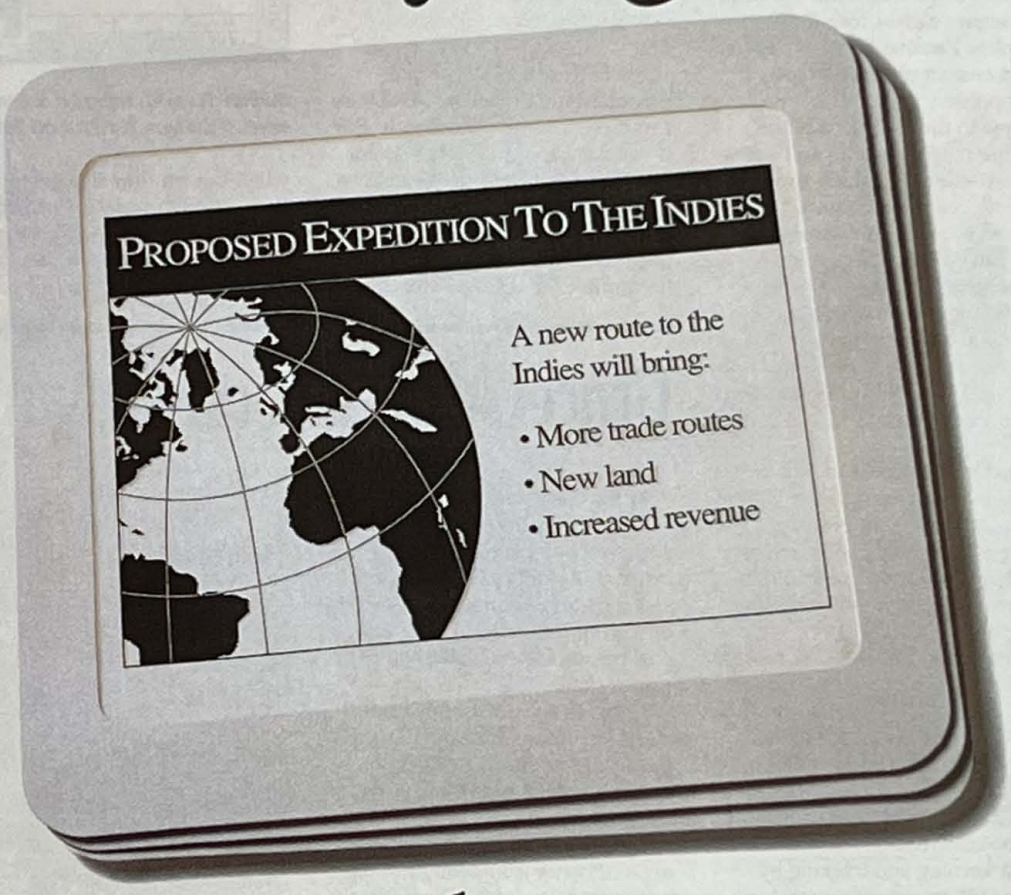
Symantec Corp. is at 10201 Torre Ave., Cupertino, Calif. 95014. Phone (408) 253-9600; fax (408) 252-4694. □

SYSTEM 7 COMPATIBILITY

GreatWorks	
Balloon help	Yes
TrueType	Yes
Publish and subscribe	No
Apple events	Yes
32-bit addressing*	Yes

*According to vendor

The easiest way to get from here,



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MacDraw Pro at an amateur price

Can handle curves, text, color better

By Clay Andres

Claris Corp.'s industrial-strength drawing tool for every business need has turned Pro. With a group of new features and added tools, MacDraw Pro is more capable when dealing with curves, text and color than its predecessor, MacDraw II.

Colors and blends. MacDraw Pro's most noticeable enhancement is the new color tools. The Eyedropper tool (popularized by color paint programs) is used to pick up a sample from your drawing to match colors — no more guessing by choosing from the 16 million colors available.

But the core of MacDraw's color technology is a new drop-down color palette that provides entry into the complete 24-bit-color wheel and a host of color-editing choices. The default palette, which can be torn off and kept open for quick access, shows Claris' 168 chosen colors.

You can edit, move, add and delete color chips to customize the palette further; save custom palettes; open multiple palettes simultaneously; and adjust the order and view of the color chips. MacDraw Pro comes with many palettes, including the complete Pantone Matching System colors custom-matched to several color printers.

Next to the color icon is the familiar pattern palette and a new gradients palette, which also can be torn off, customized, stored and opened in multiple versions. Gradients can be edited for sweep (directional, circular or shape burst), angle and color, but there is no way to blend them to a curve or irregular shape as there is in Adobe Systems Inc.'s Illustrator and Aldus Corp.'s FreeHand.

Text and type. The new Notes tool provides a handy way to annotate your document. Notes are special text boxes that can be moved, sized or placed anywhere in the document, and hidden in display and printing modes.

More importantly, MacDraw Pro has a new ruler similar to the one in MacWrite II. Anything you type can be formatted using indents, tabs, line spacing and alignment tools on the Text Ruler. Margins are set by changing the width of a text object. You can manually adjust kerning and tracking by using Option-arrow key combinations, but there's no way to specify default tracking or word spacing. MacDraw Pro uses the Claris dictionary system, which allows all Claris applications to share the same dictionaries to check spelling.

Type objects can be rotated or flipped just like any other object and still be edited or formatted as text. However, there are none of the advanced manipulation tools of other drawing programs for fixing type to a line, fitting it inside an object or converting type to outlines for editing the letterforms.

Curves. The Bezigon tool is Claris' simplified device for drawing the nearly ubiquitous Bezier curve that is at the heart of PostScript's curve-drawing algorithms. Rather than indirectly specifying curves by pulling on handles, the Bezigon tool follows the movements of the mouse. Logically this is a more natural way to draw curves, but after years of using Illustrator and FreeHand, we found it difficult to get the Bezigon tool to draw a curve where and how we-= wanted it.

The improved Polygon tool is more predictable for drawing curves. Like FreeHand's Combination tool, the Polygon tool can draw both straight- and curved-line segments.

Editing shapes made with the Bezigon, Polygon or Freehand tools requires an extra step to select the shape and invoke the Reshape command from the Edit menu, but you can edit your shape by moving, adding and deleting control points. There is also a new Scale command, and an indirect method to cut, select and paste objects to join them, but still no way to skew objects.

Performance. With small monochrome drawings, MacDraw Pro is responsive and smooth. But if you want to splash lots of color or take advantage of large screens, be prepared to add RAM. When running in a 3-Mbyte MultiFinder partition, MacDraw Pro reduces the number of colors it can display when the window size gets bigger than a 6-inch square. Performance also falls off sharply. We found that 4 Mbytes works better, but to work with a full-color, full-page spread, you will need even more memory. If you use Adobe's Type Reunion, MacDraw Pro is unbearably slow, but you can turn Type

See MacDraw Pro, Page 46

MacDraw Pro sports impressive new color support, a gradient editor and a tool for drawing Bezier curves. It also has a Text Ruler and Notes tools for text manipulation, tracking and kerning.

SCORE CARD
MacDraw Pro

Overall value	●
Performance	◉
Features	●
Ease of use	●
Documentation/support	●
List price	$399

● Excellent ● Very good ● Good
◉ Average ○ Below average

ON BALANCE
MacDraw Pro
Claris Corp.

It won't win many converts, but if you liked MacDraw II, MacDraw Pro has new color, text-control and curve-drawing tools to keep you happy. Claris' use of universal dictionaries and the XTND system for importing and exporting files makes MacDraw Pro stronger than some of its more full-featured competitors. MacDraw Pro is the first step to Claris updating its entire library to be System 7-savvy.

SYSTEM 7 COMPATIBILITY

MacDraw Pro	
Balloon help	Yes
TrueType	Yes
Publish and subscribe	Yes
Apple events	Yes
32-bit addressing*	Yes

*According to vendor

GraceLAN 2.0 is an easy network upgrade

By Jonathan A. Oski

The cost of network ownership goes well beyond the initial expense of purchasing hardware and software. Maintaining a LAN often requires one full-time support person for each 20 to 30 workstations.

Network-administration and management applications can ease this requirement by enabling one person to manage a larger group of workstations.

An important aspect of managing a network is knowing not only its topology and spatial configuration, but also what applications are being used.

Network-administration tools such as Technology Works Inc.'s GraceLAN can help network managers keep an up-to-date inventory of the hardware and software configuration of their AppleTalk network.

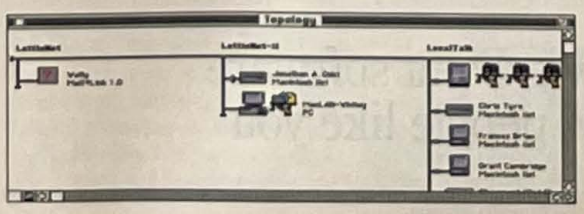
We applauded Technology Works for its initial release of GraceLAN (see MacWEEK, March 12) as the first network-administration application that gathered real-time information.

Other vendors in this competitive market niche, such as Pharos Technologies Inc. (STATUS*Mac) and CSG Technologies Inc. (Network SuperVisor), soon followed with similar features.

What's new. Technology Works recently began shipping Version 2.0 of GraceLAN, which smooths out some features and offers some new capabilities, including:

- The GraceLAN Responder extension can be renamed so it can be loaded any time during start-up.
- More information can be entered into each workstation's Responder extension in additional password-protected comments fields.
- New modules include parameter RAM profiling and complete System 7.0 support.
- Either selected fields or the entire contents of a window can be exported.
- Information gathering and exporting can run as a background task.
- Settings to export GraceLAN's data to a data-management application can be saved as scripts.
- Responders can be password-protected to limit access to individual workstation profiles.

See GraceLAN, Page 47



GraceLAN provides a unique feature that creates a complete, logical topology of your network.

SCORE CARD
GraceLAN 2.0

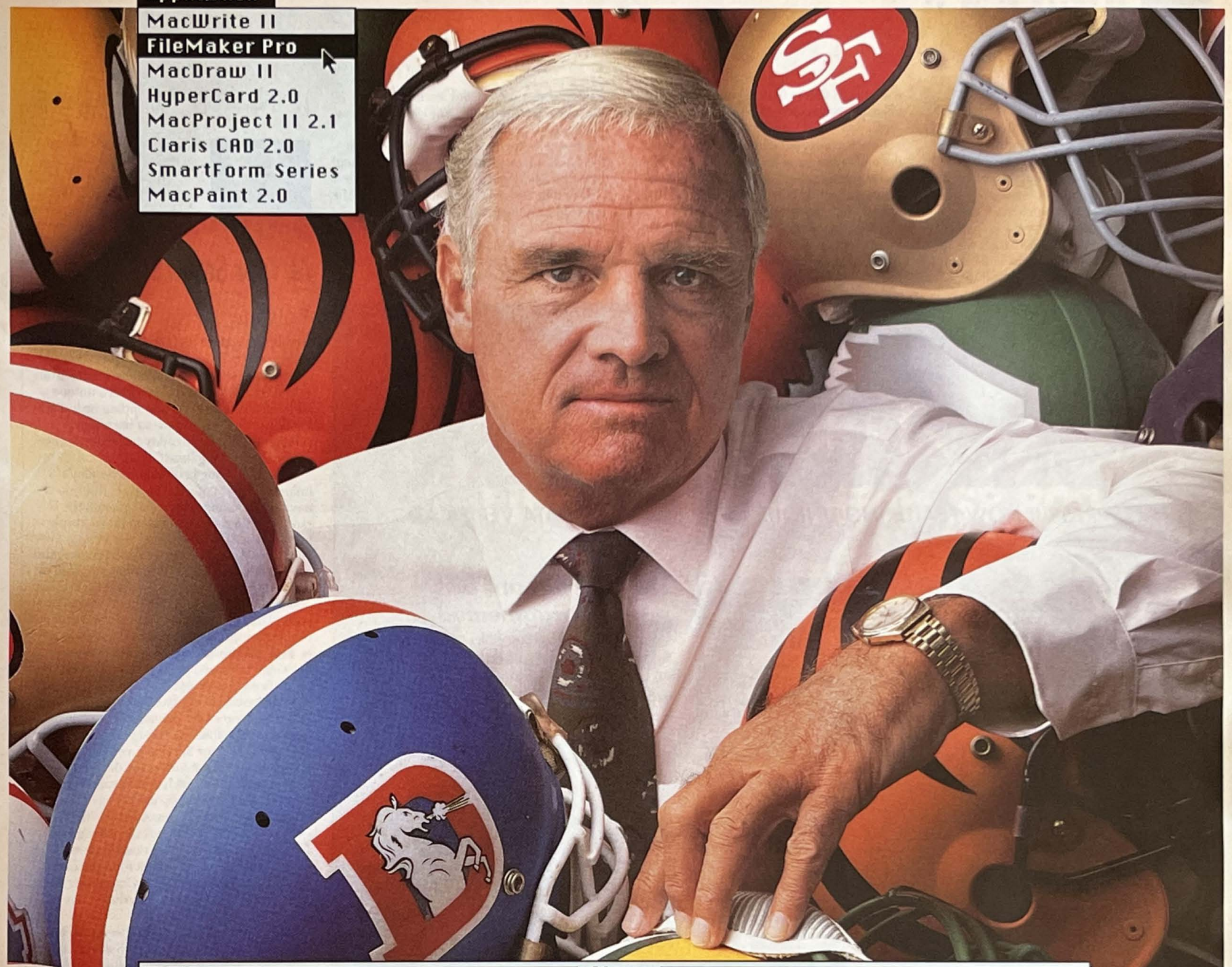
Overall value	●
Performance	●
Features	◉
Ease of use	●
Documentation/support	◉
List price	$495*

● Excellent ● Very good ● Good
◉ Average ○ Below average

*50-user kit; 200-user network license, $1,195

ON BALANCE
GraceLAN 2.0
Technology Works Inc.

GraceLAN 2.0 upgrades the premier real-time network-administration application. GraceLAN gathers information from the nodes on your network quickly and easily. Its lack of an integrated database to store and analyze profiles necessitates purchasing an additional database product. For those network managers embroiled in System 7.0 upgrades, GraceLAN's ability to distribute updates automatically makes the process relatively painless.



Story

He hunts heads with a single piece of software.

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MacDraw Pro

From Page 44

Reunion off by holding down the Shift key when you launch MacDraw Pro.

Documentation and support. MacDraw Pro comes with a good Getting Started guide, a quick-reference guide, a color guide and a 400-page user's guide. There is a HyperTour included, as well as numerous MacDraw Pro examples on disk. The Claris on-line help system explains all commands and tools. Finally, you can call Claris' free technical support (a toll call to Santa Clara, Calif.).

Conclusions. Attaching the word Pro to the end of the name does not put MacDraw much closer to the high-end capabilities of Illustrator and FreeHand, but MacDraw continues to be a powerful, easy-to-use, general-purpose drawing program. Major improvements in the use of color, text and drawing curves help to solidify its position as the program of choice for those who don't want to invest dollars and learning time in Illustrator or FreeHand. For low-end users, MacDraw II is still available for $199.

Despite some improvements, MacDraw Pro has not moved ahead of the competition. However, it does offer a good compromise between utility and ease of use for all but the most-demanding practitioners of structured drawing.

Claris Corp. is at 5201 Patrick Henry Drive, Box 58168, Santa Clara, Calif. 95052-8168. Phone (408) 987-7000. □

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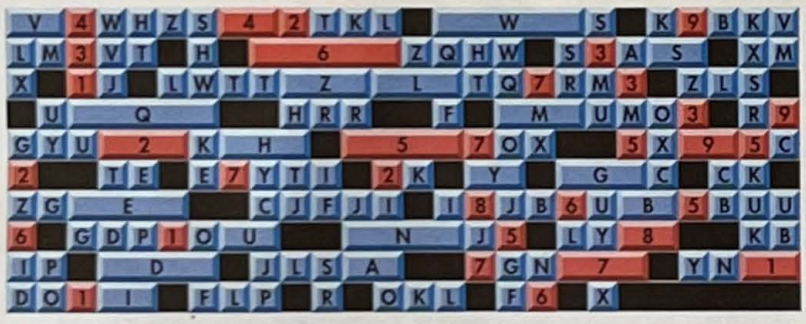
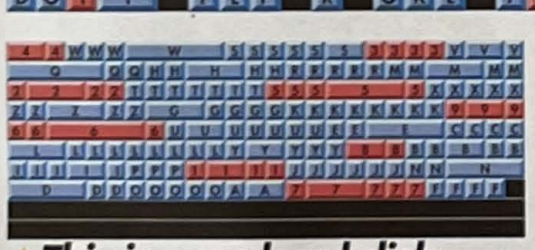


This is your hard disk severely fragmented

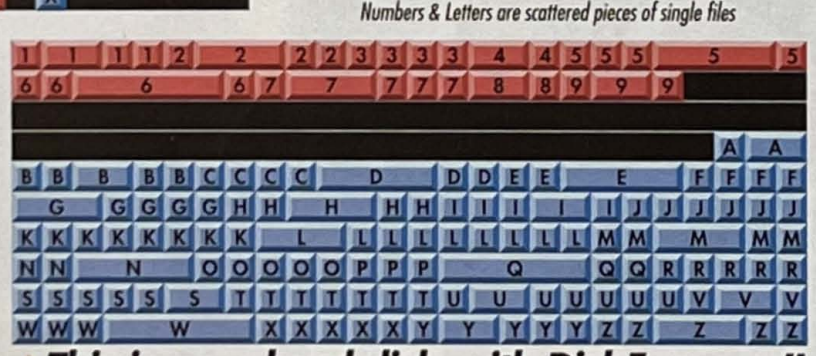
Fragmentation pushes pieces of files all over your hard disk, forcing your disk head to work much harder just to keep up with your files. The worrisome results are increased head movement and progressively slower file access times that can slow down any Mac—even yours!

Frequently used files Seldom used files Free space
Numbers & Letters are scattered pieces of single files



This is your hard disk defragmented

Even defraggers can't help much. Ordinary defragmentation software just places pieces of individual files adjacent to each other. They don't have the intelligence to constantly monitor file usage to determine which of your files are frequently used and which aren't. So, any increases in performance are modest and only temporary, disappearing as soon as you use your Mac again. Don't worry, there's DiskExpress II.



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IN BRIEF

At Your Service

Reminder service isn't all that helpful, even with friendly Phil

At Your Service is a reminder service from Bright Star Technology Inc. with a unique added feature: Instead of popping up a dialog box or flashing the menu bar when a reminder occurs, the utility instead presents you with a "talking head."

Like the talking head in John Sculley's infamous videos of a future Mac, this one is named Phil; unlike that talking head, the range of things you can say when you reply is limited to a "Thank you."

At Your Service, priced at $59.95, provides several different kinds of reminders, most of which are customizable. First, Phil's face can appear when your Mac starts and say "Welcome To Macintosh." He will also say something when you shut down the Mac. Secondly, Phil can provide reminders at user-definable intervals, telling you to take a break from your work.

Phil also can work with Microsoft Mail 3.0 or CE Software Inc.'s QuickMail to let you know verbally that you have received mail.

Finally, At Your Service provides a fairly complete set of reminders for different types of events, such as lunch appointments, anniversaries, birthdays, etc.

When one of your reminders is "triggered," a modal dialog box displaying Phil's face and a message appear on the screen. You can use the built-in microphone on a Mac IIsi or LC or Farallon Computing Inc.'s MacRecorder to dismiss this dialog box by saying "Thank you."

At Your Service has several components. The heart of the program is a System extension that lets you configure the utility. A System extension (which works fine in both System 6.0.x and System 7.0) actually posts the reminders. Finally, there's a folder full of different faces for Phil, ranging from a "drawn" version that uses 39 Kbytes of RAM to a full-color digitized version that eats up nearly 400 Kbytes of RAM. Included in the package is a "starter" version of Berkeley Systems Inc.'s After Dark screen saver that, predictably, features different effects using Phil's face.

We wonder whether the talking head approach really adds to the value of a reminder system. Microsoft Mail and QuickMail users seem to have gotten along fine with the existing methods of incoming mail notification.

When the At Your Service dialog appears, it immediately comes to the top of the screen and can interrupt your work. If you don't notice the dialog appearing, you can merrily continue typing and your characters go nowhere.

We'd appreciate another option in setting up the program, something like a blinking menu bar that you can trigger to get the dialog box.

Bright Star Technology Inc. is at 1450 114th Ave. S.E., Suite 200, Bellevue, Wash. 98004. Phone (206) 451-3697; fax (206) 454-1062. — *By Steve Michel*

GraceLAN

From Page 44

Installation and configuration. GraceLAN can be installed on any Macintosh or IBM PC or compatible on your AppleTalk network. The Responder extension must be copied into each Mac workstation's System folder or loaded as a terminate and stay resident program on each PC. If the workstations have been prepared to accept an upgrade, GraceLAN 2.0 can be installed on all the Mac nodes in a single broadcast operation.

Preparing the Mac requires both calling off virus-protection programs that can prevent changes to the system and setting the Responder security level to Make Changes at the individual workstations. Depending on your network's complexity and traffic, you will need 10 to 30 seconds per workstation upgrade. As in previous versions, PC workstations cannot be installed over your network. Current 1.0 owners can contact Technology Works for free upgrades to Version 2.0.

Once installed, GraceLAN's real-time scanning instantly profiles any or all the workstations you have selected in the Zones or Macintosh windows. The time required to perform the scan will depend both on the number of zones on your network and the level of activity of each of your clients. By activating the Details window, you can collect more-detailed information on any or all of those stations listed in the Macintosh window. Although a useful new feature of Version 2.0 displays the status of network activity in the corner of each window, there were annoying instances when unspecified network activity prevented tasks from being performed.

Still no database. One of the noted shortcomings of GraceLAN's initial version was its lack of an integrated database manager. Most network managers are likely to have a database manager suitable for use with GraceLAN, but its continued absence in Version 2.0 is more glaring compared with STATUS*Mac and Network SuperVisor, both of which include integrated database features. GraceLAN's efficient network scanning enables quick response to immediate problems, but it still lacks tools for accumulation and analysis of traffic and usage information necessary for long-term network planning.

The format of GraceLAN's exported data makes it easy to import into most popular database-management applications. Technology Works also provides FileMaker Pro templates for importing GraceLAN's Macintosh and PC profiles and an Excel 3.0 macro sheet to log printer usage and count occurrences of applications throughout your network.

Technology Works includes a note that a new manual is on the way, but no comprehensive new documentation is available for Version 2.0. The company has included a series of addenda to cover its new features and the templates, but they are no substitute for documentation complete with screen shots and illustrations to help clarify the use of new features.

Performance. GraceLAN performs better than its competitors under most normal circumstances. Since a specific node can often be scanned in less that a minute, the information GraceLAN reports effectively reflects the actual state of your network devices. GraceLAN continues to report a network error when it can't rouse Macs snoozing under screen savers or hiding behind security applications. Although the problem stems from the wide variety of such utilities and can't be blamed solely on GraceLAN, it is frustrating nonetheless.

Conclusions. GraceLAN 2.0 adds some new features and refines others in this easy-to-use network-administration package. Recent upgrades to competitors' products have duplicated some of GraceLAN's unique features, but its secure and unobtrusive scanning is still superior. The ability to scan and export data in the background using updated templates and macros makes working with GraceLAN's data in a companion database easier, but the continued absence of an integrated database is more noticeable in light of competitive offerings. A companion product like Claris Corp.'s FileMaker Pro or Microsoft Excel should be factored into your buying decision.

Technology Works Inc. is at 4030 Braker Lane W., Suite 350, Austin, Texas 78759. Phone (512) 794-8533 or (800) 688-7466; fax (512) 794-8520. □

SYSTEM 7 COMPATIBILITY

GraceLAN 2.0	
Balloon help	Yes
TrueType	Yes
Publish and subscribe	Yes
Apple events	No
32-bit addressing*	Yes

According to vendor

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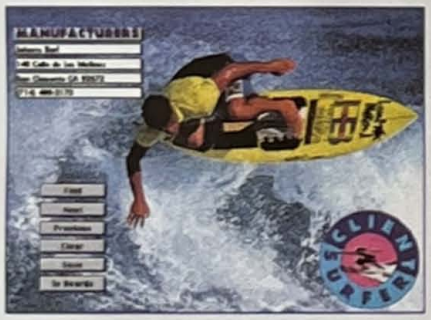

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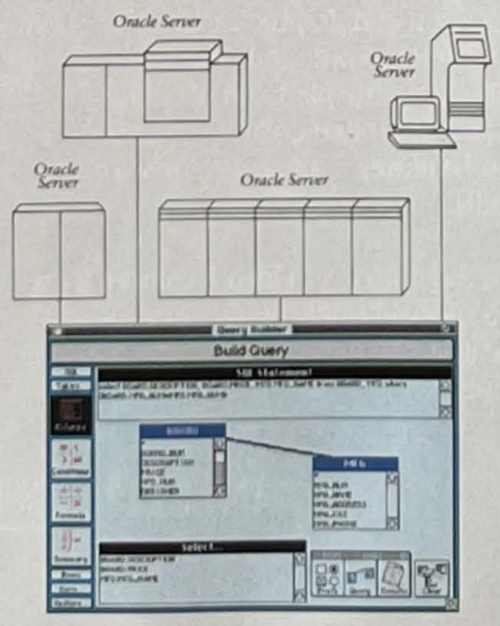

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CLIENT/SERVER APPLICATIONS.

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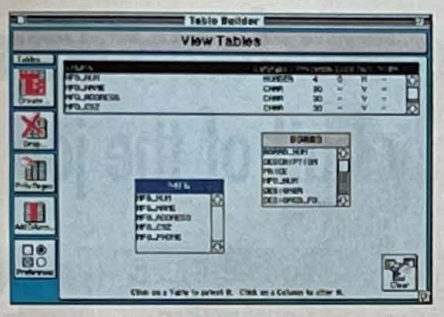
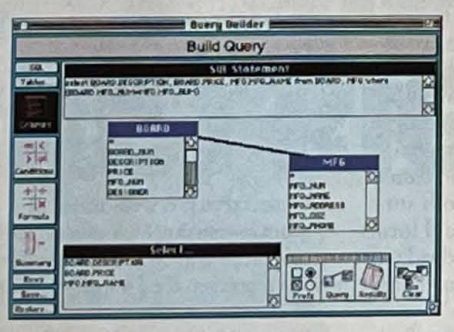


Oracle Card's Table Builder enables end users to build databases without programming.

Oracle Card's Stack Builder enables end users to build multimedia applications without programming.



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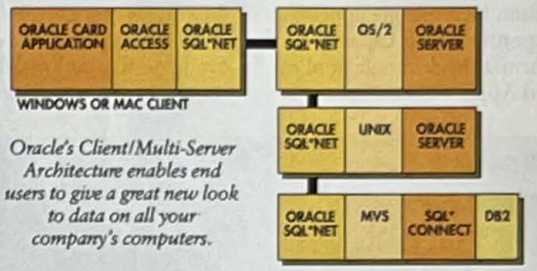

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COMPARISON

CD-ROM: The next generation

New drives pick up speed, lower prices

By Craig O'Donnell

CD-ROM drives are becoming less esoteric and more generic as information increasingly appears in the inexpensive, high-capacity CD-ROM format. Multimedia applications and Apple's QuickTime will put pressure on users to invest in this proven, but not yet widespread, mass-storage medium.

When we last reviewed the crop of CD-ROM drives available for the Macintosh, we found a group that was generally expensive and slow (see MacWEEK, Aug. 7, 1990). Recently, a new generation of CD-ROM drives has become available that reportedly feature much-improved performance at a lower cost than the older units.

We reviewed eight of these newer CD-ROM drives. The drives tested represent four basic drive mechanisms: the TXM3301 from Toshiba America Information Systems Inc.; NEC Technologies Inc.'s NEC-83, which is used in NEC's CDR-73; Sony Corp.'s CDU-541, found in Liberty Systems Inc.'s 115CD; and an unnamed Hitachi Home Electronics Inc. mechanism, used in that company's CDR-1750S. (Apple's reentry into the CD-ROM market was not available at press time; we will evaluate it when it ships.)

Four other vendors use the TXM3301 mechanism: Procom Technology Inc., with its HiPerformance CD-ROM; MacProducts USA, with the Magic CD-ROM; CMS Enhancements Inc., with the PCD-600; and Relax Technology Inc., with the Vista CD-ROM.

Faster, fastest. Five months ago, the Toshiba TXM3301's 325-millisecond access time was touted as the industry's fastest, but NEC has pared that down to 300 milliseconds with the NEC-83. Both mechanisms use a 64-Kbyte RAM cache to increase data transfer rates. NEC's CDR-73 offering is priced for the premium market, while Toshiba's mechanism is the OEM drive of choice for "generic" fast drives.

Each comes with a CD caddy; a 25- to 50-pin SCSI cable; a terminator block; driver software; two 50-pin SCSI ports; a front-panel headphone jack with volume knob; and audio CD software. All connected easily into the SCSI chain, though those that did not use DIP switches to set the SCSI ID were less frustrating.

Seen and not heard. MacWEEK readers are familiar with the problems of Apple's unfortunate

See CD-ROM, Page 52

ON BALANCE
CD-ROM drives

MacWEEK

Four mechanisms — from Toshiba America Information Systems Inc., Sony Corp., Hitachi Home Electronics Inc. and NEC Technologies Inc. — were represented among the eight drives tested. All the drives were better performers than the last generation of Mac CD-ROM drives (see MacWEEK, Aug. 7, 1990), offering a good set of features and lower prices.

- **The NEC CDR-73** was by far the fastest drive in most tests, but its performance suffered most under System 7.0. It is a good general choice for desktop use and offers a nice balance of features and price, although the additional-cost SCSI kit should be included in the general price of the drive.
- **The Liberty 115CD** from Liberty Systems Inc. uses the Sony mechanism and was a solid performer. It was marginally faster than the drives that use the Toshiba mechanism. The 115CD is a good choice, especially if size and portability are important.
- **The CDR-1750S** from Hitachi performs about as well as the Toshiba-based players but is much more expensive.
- **The PCD-600** from CMS Enhancements Inc. uses the Toshiba mechanism, but it comes with a proprietary driver. This driver was excruciatingly slow, buggy, unreliable and would not mount CDs that the other drives easily handled. We cannot recommend this unit.
- The other four drives based upon the Toshiba mechanism — the **Magic CD-ROM** from MacProducts USA, Procom Technology Inc.'s **HiPerformance CD-ROM**, Relax Technology Inc.'s **Vista CD-ROM** and Toshiba's **TXM-3301E1-MAC** — generally performed identically. These units offer good performance and low prices.

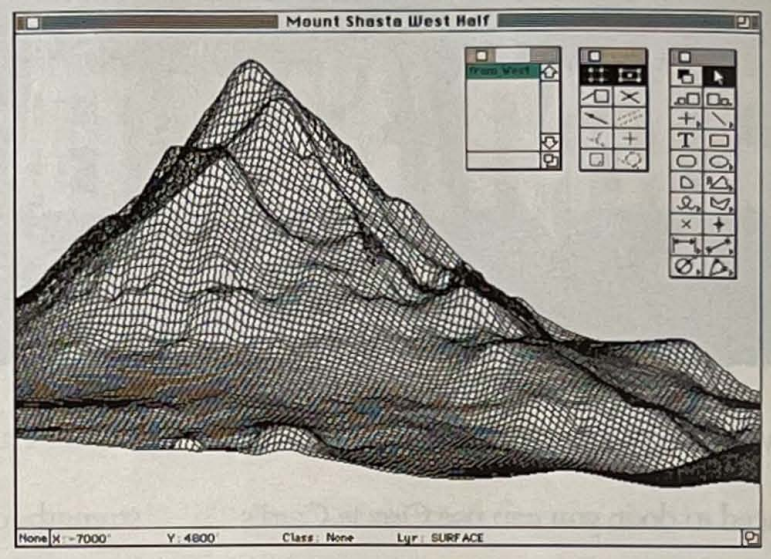
SCORE CARD
CD-ROM drives

MacWEEK

Categories	CMS Enhancements PCD-600	Hitachi CDR-1750S	Liberty 115CD	MacProducts Magic CD-ROM	NEC CDR-73	Procom HiPerformance CD-ROM	Relax Vista CD-ROM	Toshiba TXM-3301E1-MAC
Overall value	○	⊙	●	◎	●	◎	●	●
Performance	○	⊙	●	◎	●	◎	◎	◎
Features	●	◎	◎	⊙	◎	◎	⊙	◎
Installation/configuration	○	◎	◎	◎	◎	◎	◎	⊙
Compatibility	○	●	◎	◎	◎	◎	●	◎
Documentation/support	⊙	○	⊙	○	●	●	⊙	⊙
List price	$1,099	$1,060*	$899	$629	$1,098*	$895	$579	$899

● Excellent ◎ Very good ○ Good ⊙ Average ○ Below average

*Includes additional Mac interface kit



While ContoursPro does an excellent job of mapping data, it requires export to a 3-D CAD program to generate models, like this model of Mount Shasta, which was created in Graphsoft's MiniCad+.

ContoursPro transforms data, but does only half of the job

Modeling requires 3-D CAD program

By G. Donald Bain

A classic technique for displaying data graphically is to draw lines connecting points that share a similar value; the most familiar example is a contour map of a land surface. Other data also can be represented with contours (also called isolines), such as barometric pressure, annual precipitation, and even data with no actual physical form (three variables sampled by scientific instruments, for example). An extension of this technique creates 3-D wireframe or solid models of the theoretical surface.

Applications that create isolines and models are complicated because the data points may not be closely and evenly spaced; logical assumptions must be made about the surface that connects them. This surface may vary (even with the same data points) depending on the nature of the phenomena being mapped; atmospheric data is usually portrayed as a smooth surface, while mountainous land forms may be sharply creased and ridged. The drawing of contour lines is an art as well as a science.

ContoursPro from Graphsoft Inc. goes a long way toward providing professional-quality contouring on the Mac. This new program is based on a sophisticated mathematical model, allows fine-tuning of the process, and produces both isolines and 3-D models. Its major defect is that it is not a stand-alone program but must be used with CAD or drawing software.

Easy to use. The program is well-designed and easy to use. First, various parameters for input, output and processing are set, then data (typically in the form of x, y, z coordinates) is read from a text file. The location of the data points appears in a dialog box, and the

See ContoursPro, Page 54

SCORE CARD
ContoursPro

MacWEEK

Overall value	○
Performance	●
Features	○
Ease of use	●
Documentation/support	●
List price	$495

● Excellent ● Very good ● Good ⊙ Average ○ Below average

ON BALANCE
ContoursPro
Graphsoft Inc.

MacWEEK

ContoursPro is a well-crafted program for making high-quality contour maps and 3-D surface models. The algorithm used for construction of the theoretical surface is excellent, and map creation is well-designed and complete. However, the lack of viewing and printing features and limited output choices severely hamper its usefulness for all except CAD users. Given these restrictions, it is of limited value.

JUST RIGHT

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NEC CDR-36: Truly portable CD-ROM

Resembling nothing so much as Spock's tricorder, the 2-pound CDR-36 from NEC Technologies Inc. is truly portable. It is also the successor to the CDR-35, a poor performer from the previous generation of Mac CD-ROM drives.

With a tiny footprint, the CDR-36 is barely taller than the single 50-pin SCSI connector on the rear. Add the optional clip-on battery pack, and it is the only battery-powered drive reviewed. A largish wall-mount AC transformer on its power cord takes care of AC operation and battery charging simultaneously.

Speed? The CDR-36 is not in the same class as the other drives tested for this review. Speed loses to portability: Access time is a poky 500 milliseconds. Still, it's better than earlier CD-ROM players and adequate for intermittent use. We launched a SuperCard runtime application from a CD-ROM. On drives under System 6.0.7, launch averaged 20 seconds. The CDR-36 took 35 seconds. Performance under System 7.0 is slower, with a 28-second average for our group and 40 seconds for the CDR-36.

On the 5.5-Mbyte file copy under System 6.0.7, the CDR-36 took a slow but steady 60 seconds, only a little worse than the Toshiba drives. Performance sagged under System 7.0: It took two minutes and 27 seconds to copy the file. When CE Software Inc.'s DiskTop 4.0 was used to make the copies, however, the CDR-36 posted a respectable 45-second average under both system versions.

Almost plug and play. NEC supplies a clear but very basic manual and a 25-to-50-pin SCSI cable. Internal termination is fixed, so a CDR-36 must end the SCSI chain. This is no problem if you're carrying only a Macintosh Portable and the CDR-36.

The CDR-36 would plug and play but for one small detail: a factory preset SCSI ID of zero, which guarantees a conflict with any Macintosh internal hard drive. Fortunately, SCSI DIP switches are right on the bottom, and it is a simple matter to reset the ID. The switches are recessed so travel will not disturb them.

The top-loading drive dispenses with the caddy; CDs just drop in. You can listen to audio CDs on this player, but there are no audio controls on the player itself. The headphone output is very powerful.

Liberty or NEC. The CDR-36 is a good, cheap portable player. It's a vast improvement over its quirky predecessor, the dreaded CDR-35, but rough spots remain. The worst is the $99 SCSI kit, consisting of one disk and a slim software manual. It also is a mystery why NEC didn't implement a mode that allows you to play audio CDs without a computer. The battery needs 15 hours to charge fully and lasts just one hour, so serious users will lug several. Finally, defeatable termination is important to many users.

If your application mainly involves copying files from CD-ROM to hard disk, the CDR-36 performs as well as any drive tested when DiskTop is used and the Finder is not. The CDR-36 can be very slow when launching applications and documents, however.

If speed is important while price and battery power are not, the 4-pound Liberty is preferred. The Liberty is a full-featured player in a minimum-size case.

— By Craig O'Donnell

CD-ROM

From Page 50

CD-ROM SC. That drive was equipped with a fan that sucked in dust, which accumulated on the lens and caused read failures. Toshiba's mechanism obviates the dust problem by using a completely sealed drive subunit, a self-cleaning lens and a spring-loaded front-panel door that closes off the disk slot. All the drives have some sort of dust-control door, and a fan seems superfluous. Relax Technology's Vista has a fan that we disconnected for noise reasons. Dust should not affect its Toshiba mechanism, but we prefer drives without excess noise.

Diverse drivers. Each player requires a driver start-up extension. These were tested under systems 6.0.7 and 7.0. There are three main drivers: one unique to CMS Enhancements; another from Trantor Systems Inc. (used by NEC, Relax, Liberty Systems and Hitachi); and one from Optical Media International (used by Toshiba, Procom Technology and MacProducts USA). Hitachi and NEC charge extra for the drivers, which we believe should be included in the price of the drive.

All rely upon Apple's Foreign File Access extension and filters to read CD-ROMs that use the ISO-9660 and High Sierra formats; we encountered no problems opening DOS text files on a demo CD.

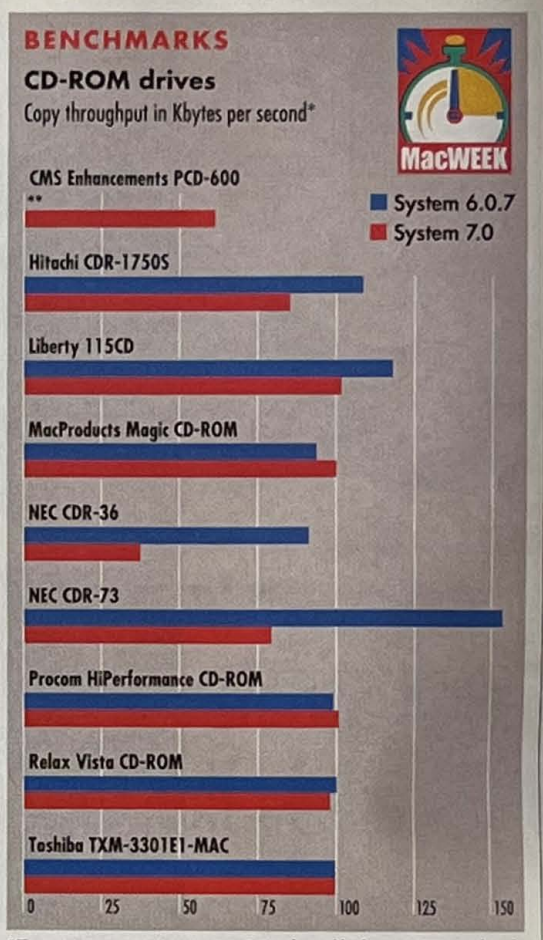
Audio playback. OMI supplies a HyperCard stack/database to control audio CDs, but Trantor's Music Box desk accessory is much better. Music Box resembles Apple's CD Remote DA; in fact, Trantor's driver supports CD Remote. CMS' audio-control application is poor, with an interface that feels like it was developed circa 1984.

All drives play audio CDs but do not give audiophile output quality. Stereo RCA outputs are preferred, but headphone outputs will drive a hi-fi auxiliary input with an adapter cable. The audio specs for the drives are scanty, and it should be noted that none of the drives measure up to a true hi-fi audio CD player.

Speed surprise. All drives have a 150-Kbyte-per-second sustained data transfer rate under System 6.0.7. Access times are below 400 milliseconds. While not as fast as current hard drives, the new group is perceptibly faster than last year's models.

We expected that a simple timing test would reveal the best performer, but testing was more complex than that. Drive mechanism, system and driver all interacted to produce unexpected results (see story, Page 54).

NEC CDR-73. The CDR-73 is built like a tank and seems ideal for multimedia with its RCA audio outputs and medium size. It stands horizontally or vertically; it is a shade narrower than the Macintosh Classic footprint. It was fastest by far under System 6.0.7. Despite this, it has a few quirks: a performance drop under System 7.0; a SCSI ID preset to zero, useless and dangerous from the Macintosh SCSI point of view; and a long wait when mounting audio CDs — up to a minute. The basic manual includes clear diagrams.



**Test measures time to copy a 5.5-Mbyte file from a CD to a hard disk. **The CMS driver didn't work under Sustem 6.0.7.*

Liberty 115CD. Ultra-small and black, Liberty's portable looks and feels rugged. Its size makes it a standout product. The 115CD originally shipped with a medium-loud fan, but Liberty removed it from subsequent shipments. The Sony CDU-541 mechanism seemed to have audio problems: Motor noise was clearly audible in the right audio channel whether sound was playing or not. The audio outputs emitted a loud, low thump when the Music Box controls were clicked. While not objectionable on headphones, the thump could be hard on the speakers when playing through a stereo system. Documentation is sparse: one page, plus Trantor's manual.

Toshiba TXM-3301E1-MAC. Toshiba's homely beige unit comes in a solid, compact case for horizontal or vertical orientation. A Discovery Systems Animation Showcase CD-ROM is included. The manual is confusing; it seems to be for three other, different drive models, and it's poorly organized.

Relax Vista CD-ROM. Relax makes the cheapest Toshiba-based drive we reviewed. The Mac Classic-size-footprint case and universal power supply also are used for Vista hard drives; its loud fan is distracting but easy to disconnect. This drive has an ergonomic quirk: The ROM drive bezel is recessed, while the case has a protruding upper lip. Consequently, the spring-loaded dust door is tough to pull down to open; groping with your fingertips gets old fast when swapping lots of discs in and out. We were tempted to pull the door off with pliers. On the plus

See CD-ROM, Page 54

Profiles of second-generation CD-ROM drives

	CMS Enhancements PCD-600	Hitachi CDR-1750S	Liberty 115CD	MacProducts Magic CD-ROM	NEC CDR-36	NEC CDR-73	Procom HiPerformance CD-ROM	Relax Vista CD-ROM	Toshiba TXM-3301E1-MAC
Price	$1,099	$965	$899	$629	$599	$999	$895	$579	$899
Additional		Cable, driver, miniphones, $95			SCSI kit, $99				
Mechanism	Toshiba TXM3301	Hitachi	Sony CDU-541	TXM3301	NEC-36	NEC-83	TXM3301	TXM3301	TXM3301
Buffer	64 Kbytes	64 Kbytes		64 Kbytes		64 Kbytes	64 Kbytes	64 Kbytes	64 Kbytes
Avg. seek time	325 ms	340 ms	380 ms	325 ms	500 ms	300 ms	325 ms	325 ms	325 ms
Warranty	1 year	1 year	1 year	2 years	2 years	2 years	1 year	1 year	1 year
Driver	CMS	Trantor	Trantor	OMI	NEC (Trantor)	NEC (Trantor)	OMI	Trantor	Toshiba (OMI)
Audio control	Application	DA	DA	HyperCard stack	DA	DA	Stack	DA	Stack
Audio line out	Yes	Yes	Yes			Yes			
SCSI setup	DIP	DIP	Knob	Knob	DIP	DIP	Knob	Knob	DIP
Termination	External	Internal/ defeatable	External	External	Internal/ fixed	External	External	External	External
Extras	Nautilus CD-ROM							EduCorp CD-ROM	Discovery Sys. Inc. Animation CD-ROM

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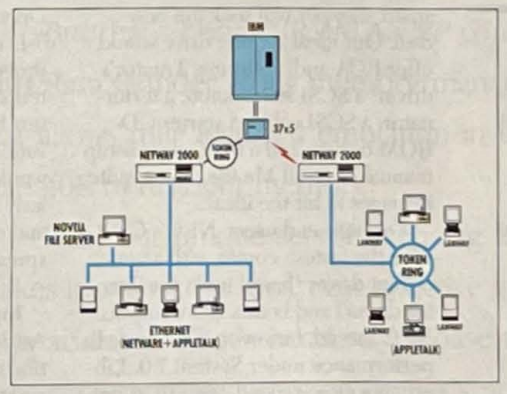

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CD-ROM

From Page 52

side, Relax uses Trantor's driver. Documentation consists of a few photocopied pages and the Trantor manual; Relax includes an EduCorp CD-ROM.

Magic CD-ROM. MacProducts and Relax share the same OEM case, Toshiba mechanism and ergonomics. MacProducts chose the OMI driver, and there is no fan or sample CD-ROM. Relax does offer a two-year warranty, which is a distinctive plus. The documentation is sparse, however.

Procom HiPerformance CD-ROM. Another Toshiba drive, this one comes in a plastic case without ergonomic problems. Procom's case is slightly narrower than Relax's. This is a bare-bones unit: No sample CD is included, but Procom supplies the best Mac-specific setup manual and a good companion manual for the OMI software.

CMS Platinum Series PCD-600. Bulkiest of the Mac Classic-footprint models and alone among the Toshiba-based drives in boasting RCA outputs, this looks like a winner. In fact, it's a turkey. The new CMS Driver 7.0.1 software is buggy — troublesome under both System 6.0.7 and 7.0. It would not mount one test disc and asked if we wanted to initialize audio disks. The rear-panel SCSI DIP switches and confusing SCSI ID setup instructions add insult to injury, in our opinion.

Hitachi CDR-1750S. If NEC's CDR-73 is built like a tank, this is built like an amphibious assault vehicle. It is the largest, heaviest drive reviewed. It performs about as well as a Toshiba. Powerful RCA audio outputs might make the Hitachi a good choice for multimedia work with applications such as MacroMind Inc.'s MediaMaker. Audio response is scarcely hi-fi, but Hitachi does include in-ear mini headphones. A big minus is a useless, confusing manual that is poorly laid out and organized.

Conclusions. For those already pondering the upcoming Apple portables, Liberty's 115CD is an excellent compact choice, though NEC's CDR-36 offers penultimate portability at a speed sacrifice (see story, Page 52).

On the desktop, a fast, robust CD-ROM drive now costs less than $600. Vendors offer various niceties, but any player built around Toshiba's mechanism is a winner if either the Trantor or the OMI driver is included. Procom, Toshiba, Relax and MacProducts run a dead heat, and a smart shopper will seek the best deal. Our ideal generic drive would offer RCA audio outputs; Trantor's driver; a SCSI select knob; a terminator; a SCSI cable; a starter CD-ROM or two; and a brief, clear setup manual or Read Me file. None quite manages to hit the ideal.

For high-end users, NEC's CDR-73 is the fastest, comes with an excellent driver (based upon the Trantor driver) and boasts RCA outputs. NEC should, however, investigate its performance under System 7.0. Liberty is a close second; with RCA outputs, a SCSI knob and Trantor's driver, it is closest to our ideal (but our review unit suffered from audio output problems, and the fan makes us a little nervous about dust).

On average, Hitachi's drive performs indistinguishably from any Toshiba. Overpriced and bulky in comparison, it is not recommended. Until CMS obtains decent software, however, the CMS PCD-600 should be avoided. □

Are CDs sluggish under System 7.0?

During testing, we noticed that copying files in the Finder seemed slower under System 7.0 than under System 6. We looked into it and were surprised at the sometimes-dramatic interaction between System 7.0, the CD-ROM driver software and the various CD-ROM mechanisms.

New system, new speed, sometimes. We used file-copying timing tests under System 6.0.7 as the base case. (CMS' buggy drivers didn't work under System 6.0.7, removing that drive from this comparison.) The NEC CDR-73 was the speediest, taking only 35 seconds to copy a 5.5-Mbyte file from a compact disc to a hard disk. (Copying the same file between hard disks took 22 seconds.) Liberty took second place at 47 seconds, and Hitachi ranked third with 51 seconds. Notably, all three drives use Trantor drivers. Drives using Toshiba mechanisms all placed in a bunch, averaging 57 seconds, regardless of driver.

It's worth mentioning that other activities, such as launching applications from CD-ROM, may be unaffected by system software. And some tasks, such as finding files, can be dramatically faster.

In Finder 7.0, large-file copies from hard disk to hard disk took more than twice as long as before. The Liberty CD-ROM drive showed only a slight variation: 15 percent slower. Other CD-ROM drives suffered under System 7.0. The Hitachi drive was 27 percent slower, the NEC CDR-73 was 92 percent slower, and the NEC CDR-36 was a horrific 145 percent worse. The Toshiba-based drives didn't suffer any appreciable slowdown under System 7.0.

DiskTop consistency. As a check, we ran the same benchmark using CE Software Inc.'s DiskTop 4.0, and we got a real surprise: Times did not vary at all. Our hard-disk-to-hard-disk copy took 14 seconds under both System 6.0.7 and System 7.0. The NEC CDR-73 blazed away at 27 seconds, the NEC CDR-36 hit 45 to 46 seconds consistently, and all others were a rock-steady 41 seconds. Driver software did not matter.

Leisure copying. If you use only System 6.0.7, the CDR-73 and Liberty are the top performers. While on the whole, System 7.0 adversely affects copy times, drives with Toshiba mechanisms showed essentially equivalent performance and are the best choices if you need one player for different system versions. NEC's drives and Trantor's drivers had significant system software-related problems; both companies need to correct the sluggishness their products suffer under System 7.0.

In any event, we suggest CD-ROM buyers invest in a copy of DiskTop. — *By Craig O'Donnell*

Product Info

CMS ENHANCEMENTS INC.
PCD-600: $1,099
2722 Michelson Drive, Irvine, Calif. 92715. Phone (714) 222-6000; fax (714) 549-4004

HITACHI HOME ELECTRONICS INC. MULTIMEDIA SYSTEMS DIVISION
CDR-1750S: $965; **Mac kit:** $95
3890 Steve Reynolds Blvd., Norcross, Ga. 30093. Phone (800) 241-6558; fax (404) 279-5699

LIBERTY SYSTEMS INC.
Liberty 115CD: $899
160 Saratoga Ave., Suite 38, Santa Clara, Calif. 95051. Phone (408) 983-1127; fax (408) 243-2885

MACPRODUCTS USA
Magic CD-ROM: $629
8303 Mopac, Suite 218, Austin, Texas 78759. Phone (512) 472-8881 or (800) 622-3475; fax (512) 343-6141

NEC TECHNOLOGIES INC.
CDR-36: $698; **CDR-73:** $999; **SCSI kit:** $99
1255 Michael Drive, Wood Dale, Ill. 60191. Phone (708) 860-9500

PROCOM TECHNOLOGY INC.
HiPerformance CD-ROM: $895
Box 8975, Newport Beach, Calif. 92658-9956.
Phone (714) 549-9449; fax (714) 549-0527

RELAX TECHNOLOGY INC.
Vista CD-ROM: $579
3101 Whipple Road, Union City, Calif. 94587.
Phone (415) 471-6112; fax (415) 471-6267

TOSHIBA AMERICA INFORMATION SYSTEMS INC.
TXM-3301E1-MAC: $899
9470 Irvine Blvd., Irvine, Calif. 92718. Phone (714) 583-3000 or (800) 456-3475

ContoursPro

From Page 50

desired minimum and maximum elevations, contour interval, and grid density can be set. When the Process button is clicked, the program automatically prepares output files.

Here the user will encounter ContoursPro's greatest weakness: If PICT format has been set as the output format, the resulting contour map can be previewed but not manipulated; other output formats cannot be previewed. Three-dimensional output cannot be produced in PICT format, so it cannot be previewed at all. There is no Print command.

The output file options — four different CAD formats — obviously are tailored to the needs of architects, engineers and surveyors. While CAD programs have many advantages for mapping and viewing data (such as layers and dimensioning), there undoubtedly are numerous potential users — such as the "geographers, oceanographers, climatologists and researchers in the physical sciences" cited by the ContoursPro manual — who do not use one. Buying a CAD program such as MiniCad+ (also from Graphsoft at a list price of $795) just to view and print the output of the contouring program seems excessive. Importing data into a drawing program as PICT files is unsatisfactory: The various layers (grid, contours, data points, labels) are jumbled together and must be sorted by hand; there is no accompanying graphical scale or other indication of units of measure; and a large, complex map often will overload the drawing program.

To complete the program, Graphsoft needs to add a reasonable set of viewing and manipulation tools both for contour and 3-D results, as well as printing capabilities and a wider range of output formats. Particularly important is the ability to export to drawing programs such as Aldus FreeHand, Adobe Illustrator and Deneba Software's Canvas, as well as 3-D drawing programs and mapping programs such as Select Microsystems' MapMaker and MapInfo. A text file of rectangularly gridded elevations (as a matrix or triplets) also would be useful to transform irregularly spaced data points into rows and columns that could be used in a spreadsheet, for example.

Input and output options. Aside from these output limitations, ContoursPro is an excellent program. Input can be in either Cartesian coordinates (x, y, z) or surveyor's units (bearing, range and elevation) and may include tags (labels) and comments. The coordinates can be absolute, or each one can be relative to the one preceding it. If necessary, the whole matrix can be offset in any of the three dimensions. Output options include contour maps and 3-D surfaces, with a visible mesh grid; contours, each of which can be created on its own layer; data points with a choice of symbols; data point values and tags; and automatic numbering of survey points.

The density of the 3-D mesh from which the contours are calculated can be set, as can the computational accuracy, thus controlling the detail of the model and the smoothness of the isolines. The density of the mesh displayed in the 3-D output is set separately. The algorithm used to construct the theoretical surface provides three choices of data-point weighting; these are appropriate for different degrees of surface irregularity.

The density of the 3-D mesh from which the contours are calculated can be set, as can the computational accuracy.

The resulting contour maps are well-designed and highly accurate. Both 2-D maps and 3-D models work well when imported into a CAD program. Special MiniCad+ templates and AutoCAD macros are provided to facilitate manipulation of layers and elements in those programs.

The program runs with no problem both under System 6.0.7 and System 7.0. With MultiFinder or System 7.0, it takes advantage of background processing, allowing you to use the computer for other purposes during the sometimes-lengthy calculations. Preparing a contour map and 3-D model of, for example, California's Mount Shasta with 2,469 data points took 31 minutes on a Macintosh IIfx, but four hours, 23 minutes on a Mac IIsi without a coprocessor. There are separate versions of the program for machines with or without a math coprocessor chip. The manual is concise but complete.

If you already have a CAD program, this is an excellent contour mapping add-on, although it is a little pricey. If you need contour maps for use in other graphics environments, it might be best to wait.

Graphsoft Inc. is at 8370 Court Ave., Suite 202, Ellicott City, Md. 21043. Phone (301) 461-9488; fax (301) 461-9345. □

SYSTEM 7 COMPATIBILITY

ContoursPro	
Balloon help	No
TrueType	n/a
Publish and subscribe	No
Apple events	No
32-bit addressing*	Yes

*According to vendor

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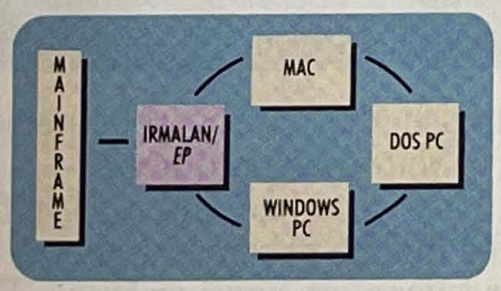

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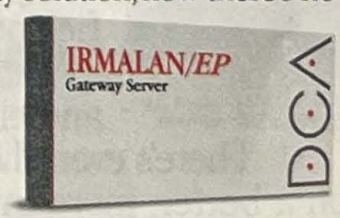

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Director keeps moving: 3.0 is better performer

RAM management honed; enhanced scripts, PC links

By Michael Murie

By our calculations, MacroMind Director 3.0 is the fifth official release of this popular animation program, if you count the two versions of VideoWorks that came before it.

In five years, Director has gone from being an animation package to a full-blown interactive authoring medium. As well as interactive presentations; stand-alone, double-clickable applications; and animations played within HyperCard, it is now possible to author presentations for playback on an IBM PC or compatible (see story, Page 58). Despite its position as the best-known animation package for the Macintosh, MacroMind hasn't been sitting still.

New functions, same feel. The upgrade does not make any major changes to the way Director works. The Cast library, which contains the graphics used in animations, and the Score, which contains information about the placement of these graphics for each frame of the animation, are basically unchanged. The Score window now features two sound tracks, making it possible to play background music with a narration. It is also possible to fade into and out of a sound channel, although this requires a Lingo script command. Another improvement is the ability to play a sound while loading an animation from disk.

Other changes include 32-bit-paint support and an option to anti-alias graphics and text on the fly, but this slows the performance of animations considerably.

Memory management. The biggest improvement for animation and presentation developers is in memory management. In previous versions, an animation had to be loaded into memory before it would play, and it would play only if there were enough memory for the whole file to fit. This meant that movies had to be segmented into small pieces; there were significant pauses while each movie segment loaded.

Director 3.0 addresses this in several ways: It now will play a sound while a new movie is loading from disk, meaning that *something* is happening during the loading process. More important, Director now offers three loading options: Before Frame One, After Frame One and When Needed.

Before Frame One is the way previous versions worked; it loads the whole file into memory before playing it. After Frame One is the new default option. This loads the cast members used for the first frame and starts playing any sound in the score, then loads the rest of the cast members. The When Needed option loads cast members for each frame as needed and is the best choice for interactive presentations.

Between all three options, Director now will play any movie, provided there is enough memory available to load the largest cast member.

While Load Options is defined through the Movie Info dialog, it is also possible to control the loading of cast members with scripts. Script instructions will load the cast members for a specified frame range or specified cast members.

We found that even without changing existing movies, Director performed much better when playing linked animations and presentations. It doesn't mean the problem is solved automatically; the producer needs to be aware of how Director handles loading of cast members. It may be necessary to use script control as well.

Another new feature that helps control memory management is Director's ability to link to external movies, PICTs and Audio Interchange File Format (AIFF) files rather than loading them into the cast of the movie. This solves the limit of 16 Mbytes of resources in a single file. It also means that any changes made to the external files will be reflected in the movie, and sound now can be played back directly from disk using the new Sound Manager.

Spritely transformations. A particularly appreciated new feature is the Transform Sprite control. This is used to specify the position of a cast member in a frame and scale it by a percentage. Another nice feature is the ability to specify the frames of a PICS file to import rather than having to import the whole file.

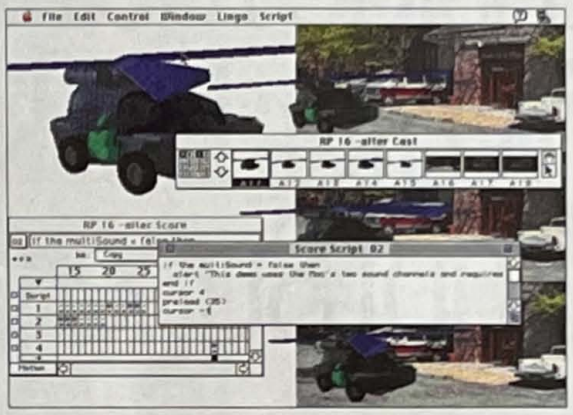
Better scripts. The scripting in Director 3.0 also has been improved. Scripts can be attached to cast members, movies and sprites. A script window is now used to display and edit scripts, so the one-line limit on scripts in the score no longer applies.

New commands for controlling sound have been added. There also are new functions and event handlers, including mouseDown, mouseUp and idle. These make scripting more compatible with HyperCard syntax.

This version is System 7-compatible, supporting required Apple events and TrueType. It doesn't support publish and subscribe, although the new linking function offers a similar capability. Users should be aware that virtual memory may conflict with the memory management used by Director. The next release will offer balloon help,

See Director, next page

You can link a file external to a Director movie with the Link To File command, which solves the 16-Mbyte limit.



Director 3.0's new score includes two sound channels, facilitating voice-overs, as well as a new window for entering scripts.

SCORE CARD

MacroMind Director 3.0

MacWEEK

Overall value	●
Performance	●
Features	●
Ease of use	●
Documentation/support	●
List price	$995

● Excellent ● Very good ● Good
◉ Average ○ Below average

ON BALANCE

MacroMind Director 3.0
MacroMind Inc.

MacWEEK

This upgrade significantly improves Director's memory management (previously its greatest weakness), and thus improves its performance. It also allows use of two sound channels. The improvements to the scripting language should make it easier to use for creating interactive presentations. With the new Windows Player, Director has become a full-blown cross-platform authoring environment and remains one of the most sophisticated multimedia and interactive authoring tools for the Mac.

SYSTEM 7 COMPATIBILITY

MacroMind Director 3.0

Balloon help	No
TrueType	Yes
Publish and subscribe	No
Apple events	Yes
32-bit addressing*	Yes

*According to vendor

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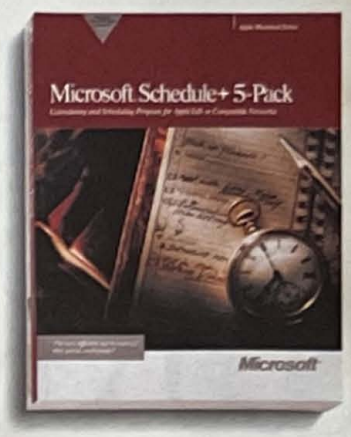

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Director

From previous page

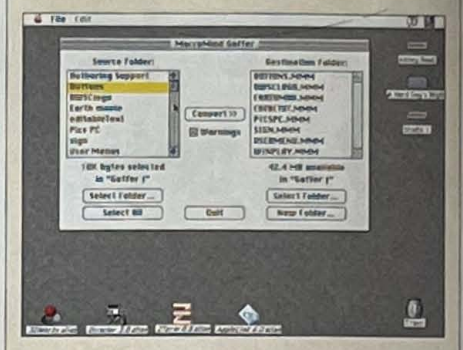
according to MacroMind. This version comes with Director's on-line help, which provides far more detailed help than possible through balloon help.

Documentation and support. Director comes with three large manuals; the Studio manual is 500 pages, and the scripting manual is 400. The 14 disks include 6 Mbytes of examples and 2 Mbytes of sound. The examples demonstrate how to use the program creatively. "The Apartment," a collection of movies that demonstrates scripting and interactivity features, is very instructive.

MacroMind has again changed its licensing policy: Projectors (stand-alone animations created using the included Player utility) now can be distributed without charge, whether for commercial or non-commercial applications. This applies to the Windows Projectors as well.

At $995 ($100 more than the previous version), Director long ago ceased to be a tool for the amateur animator. It is now a sophisticated authoring environment with a powerful scripting language and the ability to create presentations that run on a PC. With this new version, MacroMind has taken steps to improve the biggest problem with otherwise excellent previous versions — memory handling.

MacroMind Inc. is at 410 Townsend, Suite 408, San Francisco, Calif. 94107. Phone (415) 442-0200; fax (415) 442-0190. □



The MacroMind Windows Player allows users of IBM PCs and compatibles to view Macintosh animations.

Playing Director on PCs

For those willing to plumb the depths of an IBM PC, MacroMind has a prerelease version of the Windows Player. This software plays MacroMind Director animations created on a Macintosh on a PC running Microsoft Windows.

The Windows Player consists of two parts, Gaffer and Player. Gaffer is a Mac application that converts the Macintosh animation files before transferring them to the PC. These must then be transferred to the PC by some means (typically, Apple File Exchange). On the PC side, you must have a 286-class machine or better with at least 2 Mbytes of memory and Windows 3.0 running either in Standard or 386 Extended mode. The player will not run in Real mode. Installation is reasonably easy; just run the install application. Then in Windows, you must add the installed files to a Windows Group before the icons will appear on your desktop.

Select the Player and choose which animation file you want to open in a dialog box. The Player then displays menus to control playback of the animation. Choose Run and, sure enough, the animation plays.

Just like on the Mac, files can be made into Projectors, stand-alone applications.

Although they are a little slow on a '386 compared with a IIci, animations run and even Lingo scripts work, including check buttons and menus. The notes included with the product document the many vagaries: some scripting features, menu options and ink effects are not supported.

Despite these limitations, you can create a presentation on a Macintosh and run it on a PC. Developers will need Director and access to a PC because there are enough differences between the two to require some tweaking to get animations to work.

There is no corresponding way for PC owners to author Mac presentations.

The release version of the Windows Player (to ship when Microsoft Corp. officially releases its Multimedia Extensions, expected late this year) will be sent free to registered owners of the prerelease version. MacroMind says that with Microsoft Multimedia Extensions and the appropriate hardware, you will be able to play sounds on a PC, too.

At $995 (the same price as Director 3.0, a full authoring environment), the Player is not cheap, but it does include an unlimited license to distribute stand-alone files.

All in all, it's an impressive feat, and multimedia authors should give it a look. But hours spent just trying to get Windows to run in the right mode reminds us just how much we like our Macs. — *By Michael Murie*

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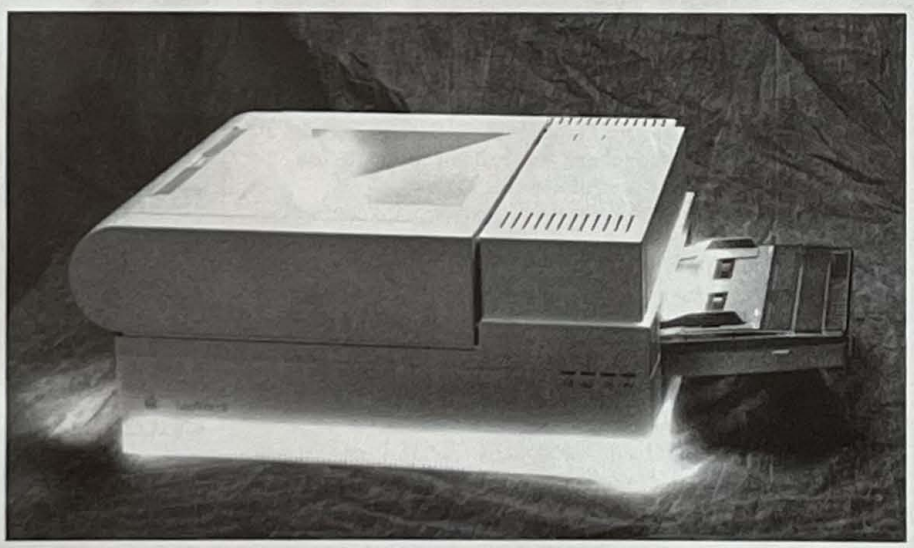

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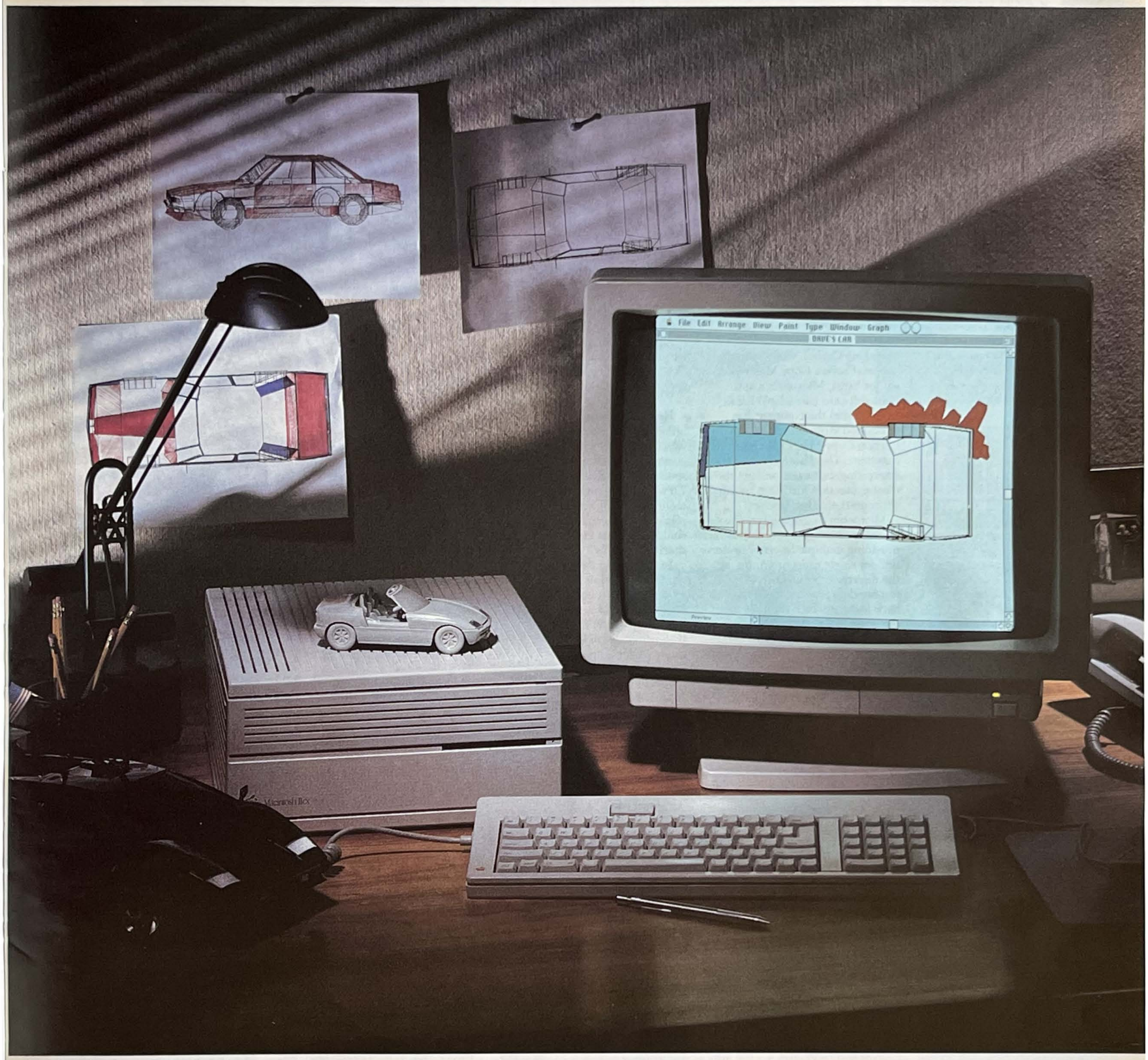

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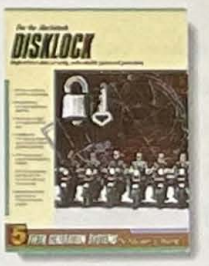

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Microcom touches up Carbon Copy

Adds virus checking, new price structure

By Shelly Brisbin

Carbon Copy Mac 2.0, released in June, is the first major upgrade to Microcom Inc.'s screen-sharing and remote-control application. Most functions remain unchanged from Version 1.0 (see MacWEEK, Sept. 11, 1990), but Microcom has added System 7.0 compatibility, virus checking, faster file transfers and an attractive new pricing structure.

Like its only competitors, Farallon Computing Inc.'s Timbuktu and Timbuktu/Remote (see story, this page), Carbon Copy Mac uses an AppleTalk network or modem connection between Macs to let users view or control activity on other Macs. Version 2.0 works with color Macs but displays all shared screens as black and white.

Safer than before. Several changes in Version 2.0 are aimed at making Carbon Copy more secure. Carbon Copy Mac now includes Virex, Microcom's anti-virus software (see MacWEEK, April 2), and the company has integrated virus detection into Carbon Copy Mac's file-transfer functions. This latter addition is interesting, but users will get the most protection just from running Virex on their Macintoshes.

Microcom also beefed up Carbon Copy Mac's password system, providing multiple layers of protection for single users or groups, at the discretion of the host. For remote dial-in users, there is a call-back feature, which requires that the guest requesting access have a phone number on file. It's a good feature and it has been implemented with minimum hassle.

Carbon Copy Mac allows a host to protect the System folder in particular, making it inaccessible to guests. The folder is visible but will not open for guests. Like other types of protection, this one can be made specific to one or more password holders.

Getting around. The essential screen-sharing functions are unchanged. When you observe a host machine, a new Carbon Copy window appears, which can be resized to view as much or as little of the host's screen as you like (within the size of your screen). If the host screen is bigger than your screen, the window on your screen will scroll around the host window as the cursor is moved. The difficulty here is that there are no traditional scroll bars to make this navigation easier. This is not an insurmountable problem, but it is a little inconvenient.

Help me please. Microcom offers an adequate user manual, which is notable for the attention given to Virex. An addendum or special section devoted to System 7.0 would have improved the document. Issues for System 7.0 users relate primarily to installation and could have been explained in a few short paragraphs.

In addition to the usual customer-support line, Microcom has set up a bulletin-board system for Carbon Copy Mac users. And here's the kicker: You access the BBS with Carbon Copy Mac. Users can leave messages or questions for the technical-support staff, pick up scripts for modems not initially supported by Carbon Copy Mac, and get the latest news and information from Microcom. A script automates the whole connection procedure. It's also a great way to experiment with serial connection

See Carbon Copy, Page 62

SCORE CARD
Carbon Copy Mac 2.0

Overall value	Good
Performance	Average
Features	Good
Ease of use	Good
Documentation/support	Good
List price	$99*

Excellent · Very good · Good · Average · Below average

Per user; per zone, $299

ON BALANCE
Carbon Copy Mac
Microcom Inc.

As the second recent release of a screen-sharing and remote-control utility — the first was Farallon Computing Inc.'s Timbuktu 4.0 (see MacWEEK, June 18) — Carbon Copy Mac is a very good choice for the price-conscious user. The bundling of Microcom's Virex and an unlimited users-per-zone license option are Version 2.0's most impressive features. When comparing Carbon Copy Mac with Timbuktu, you won't choose Carbon Copy for speed or a polished interface, you'll choose it for your bottom line.

SYSTEM 7 COMPATIBILITY

Carbon Copy Mac 2.0	
Balloon help	No
TrueType	n/a
Publish and subscribe	n/a
Apple events	No
32-bit addressing*	Yes

*According to vendor

Carbon hopes to reach past Timbuktu

Farallon and Microcom are two midsize companies elbowing each other for room in a small market. Screen sharing is hardly a critical application on most networks, but these companies are both trying to dominate the niche.

Timbuktu 4.0 (see MacWEEK, June 18) shares color screens and has a nifty new Clipboard-exchange feature that's fast and useful.

Carbon Copy Mac 2.0 has upgraded security and matched the Farallon product's flexibility in file exchange. Farallon and Microcom both claim that their products transfer files more quickly than previous versions. Sending identical files under identical network conditions gave the advantage to Timbuktu. The difference is noticeable on large files, which may take Carbon Copy Mac 30 percent longer to send. For somewhat smaller files, the difference is negligible.

On the whole, Timbuktu is a more polished product. Carbon Copy, however, gets the job done at a much better price.

Farallon Computing Inc. is at 2000 Powell St., Suite 600, Emeryville, Calif. 94608. Phone (415) 596-9000 or (800) 344-7489; fax (415) 596-9020.

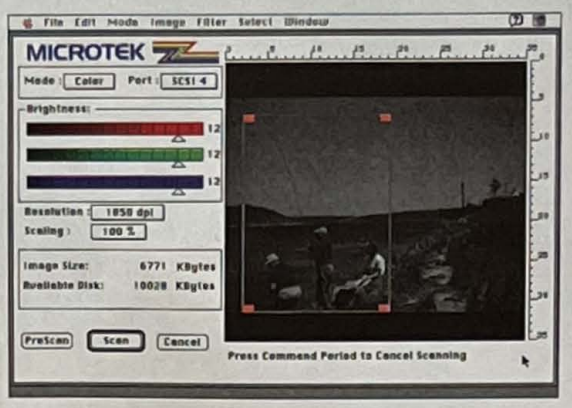
— By Shelly Brisbin

SCORE CARD
Timbuktu 4.0*

Overall value	Good
Performance	Average
Features	Good
Ease of use	Good
Documentation/support	Good
List price	$195**

Excellent · Very good · Good · Average · Below average

** Reviewed in MacWEEK, June 18, 1991.*
*** Per user; for 30 users, $1,995*



ScanMaker's Photoshop plug-in module shows prescans in black and white, which can be cropped using the horizontal and vertical rulers in the preview window.

Low-cost ScanMaker 1850S slides into niche with Photoshop

By Eric Benson

The price of scanning 35mm slides into the Macintosh has dropped dramatically with the introduction of Microtek Lab Inc.'s ScanMaker 1850S. At $3,195, the ScanMaker has a built-in SCSI interface and is bundled with the full version of Adobe Systems Inc.'s $895 Photoshop 2.0 (see MacWEEK, July 16).

ScanMaker operates in 24-bit-color or eight-bit gray-scale modes and will scan a 35mm slide or negative in either portrait or landscape orientation at resolutions up to 1,850 lines per inch (lpi). Anyone who needs to scan 35mm slides will find the speed and quality of images from the ScanMaker to be acceptable for most applications.

Higher-priced scanners from Barneyscan Corp. (model CIS•3515, $4,495) and Nikon Inc. (model LS-3500, $10,495) capture images at 1,024 by 1,520 pixels and 4,096 by 6,144 pixels, respectively. (These models measure resolution both vertically and horizontally.) At 1,850 lpi, the ScanMaker effectively limits the size of the image's reproduction on the printed page. In comparison, some big drum scanners capture an image at 6,000 dpi, an acceptable level of resolution for an 8.5-by-11-inch enlargement. With the ScanMaker, you can enlarge a frame to only about 3 by 5 inches before the pixels start to show.

Scanner setup. The ScanMaker is small (13.75 inches long by 9.5 inches wide by 6.75 inches high) and weighs only 15 pounds. Connecting the ScanMaker to the Macintosh's SCSI port is a snap, and changing SCSI addresses is done with a push-button switch on the back. A SCSI cable and terminator are also included. We found ScanMaker easy to set up and use; installing Photoshop was also painless. The only features of the ScanMaker's otherwise-blank exterior are a small flip-up lid on the top that allows easy access to a slide holder, and power and readiness indicator lights. To use ScanMaker, you'll need at least a Mac SE/30 or II with 2 Mbytes of RAM, a hard drive, and an eight-bit monitor. Photoshop and the scanning module are compatible with System 6.0.2 or later, and Photoshop is compatible with System 7.0.

Documentation. ScanMaker's documentation is well-organized and informative concerning the hardware, but it lacks any discussion of the fundamentals of color scanning. Even a few useful hints on basic operation would help in getting better results immediately. Microtek seems to have delegated

See ScanMaker, Page 62

SCORE CARD
ScanMaker 1850S

Overall value	Good
Performance	Good
Features	Average
Installation/configuration	Good
Compatibility	Good
Documentation/support	Average
List price	$3,195

Excellent · Very good · Good · Average · Below average

ON BALANCE
ScanMaker 1850S
Microtek Lab Inc.

ScanMaker is a low-cost, 24-bit color slide scanner with solid features. By including Adobe Photoshop 2.0 in the base price, Microtek gives users a complete desktop color scanning and editing solution. Scanning speed and quality are good, in some cases rivaling the performance of more-expensive equipment. Documentation just passes for useful, but toll-free telephone support is available. ScanMaker is a solid performer at a breakthrough price.

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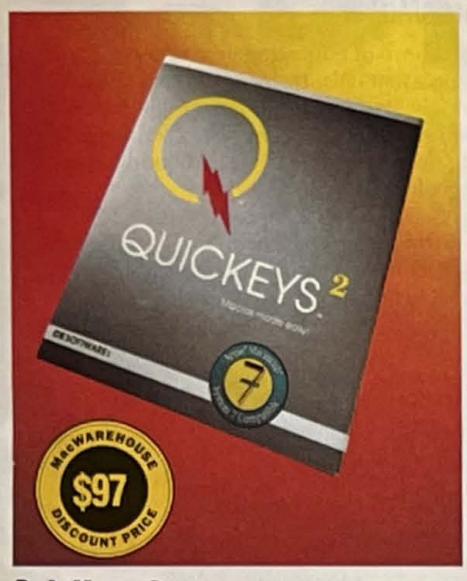


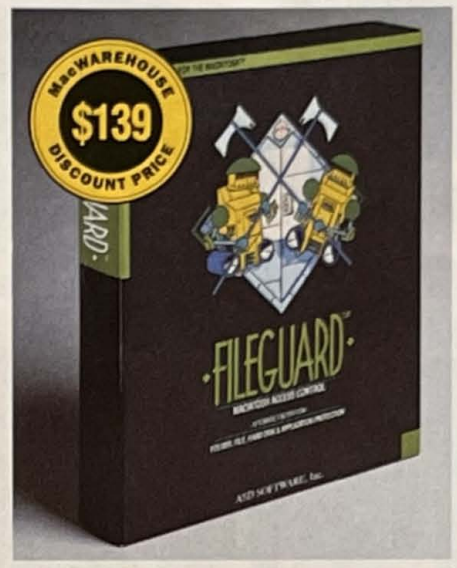
QuicKeys 2

(CE Software) Facilitates data being sent between applications, applications being launched, commands being executed, calculations made, and data returned to the user all without leaving the user's current working documents. Its 32-bit clean, and its Apple Events Extensions and balloon help make it a System 7 Savvy product. Put macros into a menu so they work like a part of the application. QuickTimer activates macros at pre-set times and dates. With QuicKeys extensions you can write your own functions, or import specially written extensions for your favorite applications. The leading product in macro technology. ***FaxFACTS 6529***

Dynodex 2.0 & DynoPage 1.0

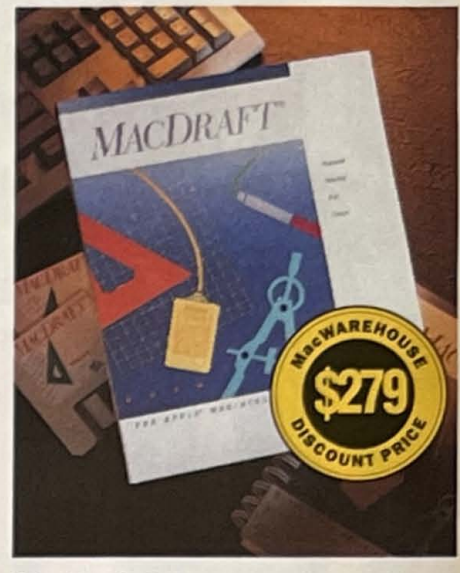
(Portfolio Systems) Dynodex 2.0 –The Instant Address Book 2.0 bridges the gap between on-screen and printed listings. The complete electronic address file prints double-sided address pages, labels, rotary cards and envelopes. Stores names and addresses with up to four phone numbers for each entry and imports and exports text to most other applications. ***FaxFACTS 1510***

DynoPage 1.0– Print any file to double-sided page of any size. Automatically prints spreadsheets, project lists, sales plans, pie charts. Also prints double-sided pages or thumbnail reductions of any document. ***FaxFACTS 2529***



FileGuard 2.7

(ASD) "It's Sleek, Fast, and safe. I highly recommend it." MacUser April 1991. Protect your Hard Drives and Partitions from unauthorized access (including security bypass with a system diskette), copying and erasure; Applications and File/Folders (including system folder) from unauthorized access, deletion, and /or illegal copying; Desktop (including system folder) from alterations by unauthorized user; Keep an eye on System Usage with the system users log which continuously tracks user/group activity. System 7 compatible. ***FaxFACTS 6806***



MacDraft 2.1

(Innovative Data) Provides the tools you need to create accurate drawings on your Mac. It supports PostScript output, has a moveable geometric drawing tool palette, multiple layers (limited only by available memory), on-line symbol libraries, 44 different scales, custom line styles, dimension lines, Bezier and spline curves, automatic area calculation, and smoothing of freehand shapes. MacDraft supports 32-bit QuickDraw and custom fill patterns in both black and white and color. Reads TIFF and MacDraw II files. ***FaxFACTS 4267***

Hayes Personal Modem 2400 Plus with Smartcom

(Hayes) Provides you with everything you need to go on-line. This 2400 baud modem has a builtin call-monitoring speaker and two LEDs, plus both phone and computer cables. Included in the package is the Smartcom terminal software to make using your modem simple and convenient. It fully supports the Mac interface. It also emulates popular terminals, such as TTY and VT54/102, to make mainframe and mini access easy. File transfer protocols include XModem, YModem, and MacBinary. Smartcom even allows you to automate log-ons. ***FaxFACTS 5100***

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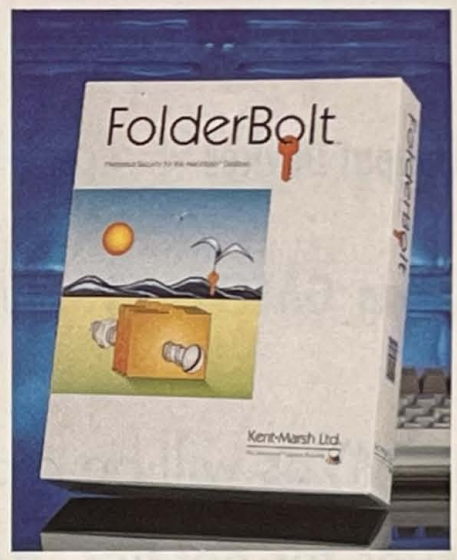

FolderBolt

(Kent Marsh) "If you work in a shared environment, but don't want to share everything on your Macintosh, you may want a copy of Folder Bolt...FolderBolt is a welcome addition to the Mac Security Arsenal." MacWeek June 25, 1991. Create completely locked folders, read-only folders, or password-protected drop box folders. No one without the password can open, duplicate, delete, or move them. FolderBolt can unlock all your folders at once and re-lock them on shutdown. Also generates a complete audit trail of all activities. ***FaxFACTS 6549***

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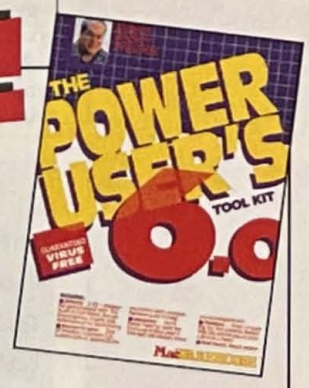

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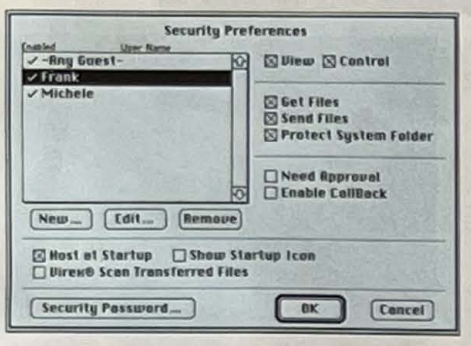

Carbon Copy

From Page 60

before embarking on your first modem session with Carbon Copy Mac.

Conclusions. Carbon Copy Mac 2.0, while still only black and white, is not hampered by major flaws, and the company's support is complete and inventive. The new version is a classic example of a company attempting to differentiate its product, primarily in terms of bang for the buck. Carbon Copy Mac has always been a good value, particularly for those who use it on a network and via modem. The inclusion of Virex in Version 2.0 is a good new feature, but the $299 package that allows unlimited users per zone is the upgrade's best attribute.

Microcom Inc. is at 500 River Ridge Drive, Norwood, Mass. 02062. Phone (617) 551-1000 or (800) 822-8224; fax (617) 551-1006. □

Carbon Copy Mac 2.0 has a new and better security system, which includes call-back and groups.

ScanMaker

From Page 60

the chore of educating new users to Photoshop's manuals. Ironically, in our recent review, we found Photoshop's documentation to be that product's only serious failing. Maybe Microtek should bundle a book on color theory too.

Scanning hardware. The ScanMaker uses a linear array charge-coupled device (CCD) and a daylight-fluorescent lamp as a light source.

Color images are scanned in three passes by ScanMaker; for each pass, a different filter (red, green and blue) is used to capture eight bits of color information, then the scans are combined to form the 24-bit image. During the scanning process, the slide moves down into the unit, then slowly travels upward between the light source and the filters, lens and CCD. The average time to produce a full, 1,850-lpi 35mm color scan is about six minutes on a IIcx with 8 Mbytes of RAM running System 7.0. Black-and-white scans take considerably less time.

Although the manual doesn't mention it, the slide holder handles slides mounted in smooth metal mounts and should also accommodate glass mounts. Mounts are a big issue in the 35mm world, and mention needs to be made about how to deal with their variety. Microtek has included a few standard plastic mounts for remounting slides and mounting negatives. We experienced no hardware problems while testing ScanMaker.

One other feature missing from the ScanMaker that's present in other scanners on the market is hardware color calibration.

Software muscle. ScanMaker was designed to capture images with a minimum of fuss, and Microtek's own software shows it. In addition to Photoshop and the related scanning plug-in module, Microtek ships ScanMaker with two system extensions, one for scanning color and one for black and white. The only reason for using the extensions, instead of using the scanning module in Photoshop, are the RAM limitations in your Mac. They provide standard scanning controls, such as resolution, brightness, scaling, prescan and cropping, and SCSI port and file-format selectors. Neither of the extensions are System 7.0-friendly, but Microtek says there is a workaround, and an upgrade should be offered soon.

In general, we found that the ScanMaker produced reasonable scans suitable for many applications, although quality could be rated only as average when compared with other scanners. But the bundling of Photoshop, a very good product, makes the ScanMaker a good overall value.

Microtek Lab Inc. is at 680 Knox St., Torrance, Calif. 90502. Phone (212) 321-2121 or (800) 654-4160; fax (213) 538-1193. □

SYSTEM 7 COMPATIBILITY*

Microtek ScanMaker 1850S	
Balloon help	No
TrueType	No
Publish and subscribe	Yes
Apple events	Yes
32-bit addressing**	Yes

**With Adobe Photoshop 2.0* ***According to vendor*

AUGUST

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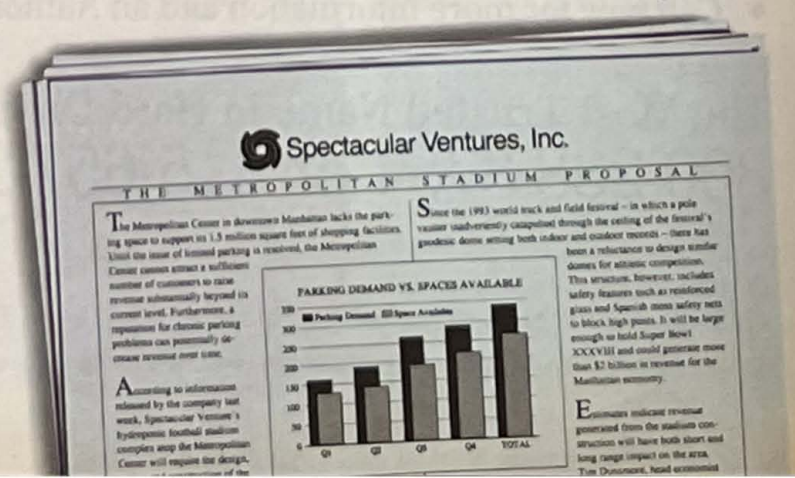

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PRODUCT WATCH

- Buying info
- Expert advice

Opening the door to more disk space for System 7. See MacInTouch.

Mac SQL databases get competitive edge

Establishing the Mac in the database market has taken on new energy with several new client-server systems coming to the market and more on the way.

By Emily Kay

The struggle to establish the Mac as a competitive database platform got a major boost in the past year, with two new Mac-based client-server systems coming to market and more on the way.

Oracle Server for Macintosh from Oracle Corp. and P.INK SQL from P.INK America have joined Odesta Corp.'s Double Helix in the Mac-based client-server database market. ACIUS Inc. is working on a client-server product for 4th Dimension, and EveryWare Development Corp., a newcomer to the database market, also is preparing a product for release this summer.

Oracle. Oracle's advantage is its "scalability," according to Debra Murelaga, group product manager for Oracle's Mac products in Redwood Shores, Calif.

"The strength of the Oracle product is that it's running on a Mac, but it can be scaled to run on a PC, Unix or VAX and all the way up to an IBM mainframe," Murelaga said. "[It also can] connect all the different environments together."

Oracle also supports a variety of network protocols and touts its product as a rich SQL environment able to connect with a variety of database platforms.

An Oracle server license is priced at $2,999 for up to eight users. Prices on the client end begin at $200 per user.

P.INK SQL. A Mac-only SQL database server, P.INK SQL works with whatever front-end application users prefer, said Jan Deriuiter, president of MacVONK*USA, which markets P.INK SQL.

It costs $695 for a server and five clients and requires a Mac with 2 Mbytes of memory on an AppleTalk network.

P.INK SQL is not as powerful as Oracle, Deriuiter acknowledged. "We don't try to sell to large transaction processing environments, like banks or insurance companies," he said. "I'd never try to sell them P.INK for that. I'd tell them to talk to Oracle."

To keep the hardware overhead needed to run the program as modest as possible, P.INK SQL uses a subset of SQL, the company said.

P.INK SQL is really intended for developers, said Jay Weiss, senior consultant with GE Consulting Services in Bridgeport, Conn.

"P.INK is not an end-user product," he said. "It's to be used by a developer producing something for a client. It's not intended for the average user, because it has almost no default front end."

P.INK SQL is used as an in-house prototype environment at GE to "prove that client-server technology on the Mac is feasible," Weiss said. "Here's an inexpensive server that can run on any kind of '020 Mac or greater, and it gives you very good performance."

Weiss said P.INK SQL will allow remote clients speedy access to databases through low-throughput telecommunications lines, as well as quick internal access over LocalTalk networks.

Double Helix. Odesta aims its non-SQL Mac-based client-server database product at small- to medium-sized workgroups with five to 20 network users, said Julie Lyon, Double Helix product manager.

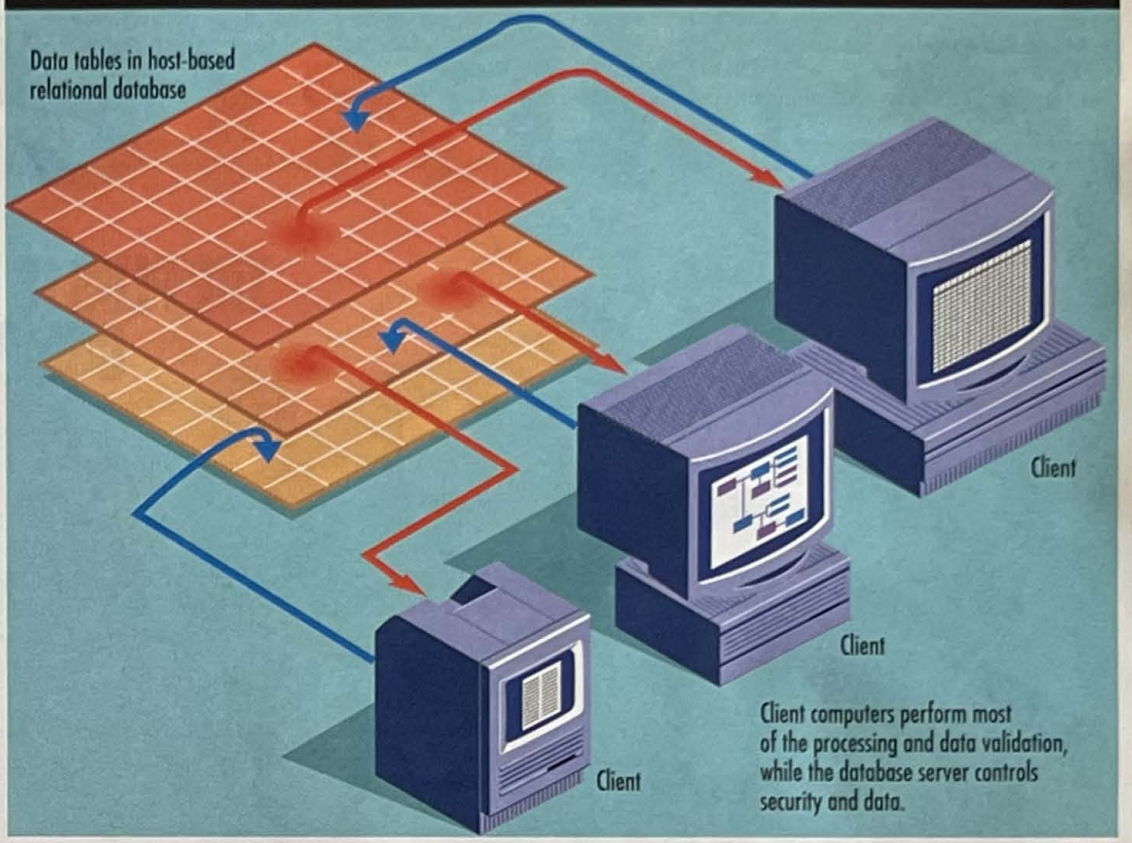
"Double Helix was designed to be a server for the Macintosh, so all our optimization is done for the Mac operating system," Lyon said. "Unlike other products, it wasn't ported from another platform."

Introduced in 1985, Double Helix boasts more than 50,000 users, noted Lyon.

The $695 three-piece client-server package includes development software, one server and two clients. A $495 multi-user kit includes the server and four clients, with additional clients

See Databases, next page

How a client-server database works


Data tables in host-based relational database
Client
Client
Client
Client computers perform most of the processing and data validation, while the database server controls security and data.

KEVIN BERGER

Why should you use a client-server environment?

The primary advantages of a client-server environment are more-efficient use of host CPUs, less network traffic and costs saved by transferring processing tasks from more-expensive hosts to the desktop, according to industry observers.

A file server-based database often treats the server volume as a local hard disk, sending relatively large amounts of data to a client per transaction, such as an entire file.

This method is slow and inefficient and tends to tie up the network, said Mark Chalkley, information services officer with Signet Banking Corp. in Richmond, Va. "Client/server is a better idea because the server sends only the [data] the user wants," he said.

For Arthur Masson, director of transportation systems development with CSX Technology in Jacksonville, Fla., the key to client-server is to "leverage the power of the workstation while shielding users from the complexities of database server processes."

Chalkley agreed: "The point is to have users access mainframe data without knowing they're using a mainframe. A client-server product lets users access server-based data through applications they're accustomed to using, without worrying where the data is coming from or how it's getting there."

The essential characteristic of client-server is shared processing between a host computer and the desktop.

"Client/server delegates each [component] to do what its strength is," said Julie Lyon, Double Helix product manager at Odesta Corp. "You let the server handle all the processing while the clients do all the windowing and processing of what's on their desktop."

The desktop should perform the processing, said Kirk Mosher, Apple database marketing manager. "In client-server, the [bulk of the] processing is offloaded from the server to the desktop," he said.

"It's an effective linking of desktop performance with enterprise systems," he said. "The power of client-server is less in the server and more in the client." — *By Emily Kay*

Databases

From previous page

priced at $150 each. Double Helix requires a Mac with 1.5 Mbytes of memory.

Coming soon. Two other Mac-based server products are on the horizon. ACIUS Inc. is developing 4D Data Server, a client-server product written completely in 4D for the Macintosh operating system, said Virginia MacLean, marketing manager with ACIUS.

4D Server does not use SQL but will connect to SQL hosts through 4D SQL Server, added Mark Vernon, ACIUS vice president of sales and marketing. "We want to give users either [optimized performance] or the ability to use 4D as a client to other SQL servers," he said.

EveryWare Development Corp. expects to release Butler, a relational SQL database server for the Mac, in August at MacWorld in Boston, according to Rudy Wolfs, president of EveryWare.

Butler, which Wolfs said would cost "much less" than Oracle, will be available in multi- and single-user versions.

The network version will afford LAN users access to data from query tools such as Fairfield Software Inc.'s Clear Access, Andyne Computing Ltd.'s GQL and Brio Technology Inc.'s DataPrism. Butler supports the ANSI Level 1 SQL Command Set, which contains the most widely used SQL commands.

Butler also will take advantage of System 7.0's Data Access Manager (DAM) to support applications that don't speak SQL.

Macs as low-cost servers. Cost is one reason many organizations prefer Macs as SQL database servers for client-server computing.

"The cheapest Sun is not that much more expensive than a fully loaded Mac IIci," noted David Beaver, president of The Automation Group Inc., a Macintosh consulting firm in San Francisco. "But any SQL database for that platform will cost $20,000, while an Oracle Mac server will be $3,000."

The Mac makes an excellent low-end, cost-effective server for small, growing organizations or Mac-only departments within large institutions, Beaver said.

If users outgrow the Mac-based server, their experience in client-server computing can facilitate the leap to larger, multiplatform Sun or VAX database servers, he said.

"The Mac product has all the features of Oracle on a Sun or a VAX, but it's easier to maintain and administer than Oracle on a bigger platform. This means I can install it for unsophisticated clients without worrying that they won't be able to manage the product."

Less training needed. Using a Mac as the server eliminates the need to train people on Unix-based platforms, which also costs more money, said Mark Chalkley, information services officer with Signet Banking Corp. in Richmond, Va.

Sybase and other database platforms differ by "orders of magnitude," he said. "They're expensive, and they're Unix based."

Unix servers require on-site systems administrators to support users, Chalkley added. "You don't have that problem on a Mac. More support people are needed for Unix, which costs more money. Why should I send two or three people to Unix classes, or pay someone who knows it, when it's totally unnecessary?"

"The Mac product has all the features of Oracle on a Sun or a VAX, but it's easier to maintain and administer than Oracle on a bigger platform," Chalkley said. "That means I can install it for unsophisticated clients without worrying that they won't be able to manage the product."

In addition to the training costs saved by using Macs as database servers, the convenience to the user is great, observers agreed.

"If you install a Mac server, you don't require anything of the user," Chalkley said. "The Macintosh interface is so much easier to use [than other solutions]. It makes user productivity greater, which is the whole reason we're doing all this."

Oracle's Murelaga said: "The Mac as a hardware platform has been evolving to [the point] where people take it seriously and can develop database applications.

"It has taken some time, but there's a lot of interest in moving there, and we'll see more products." □

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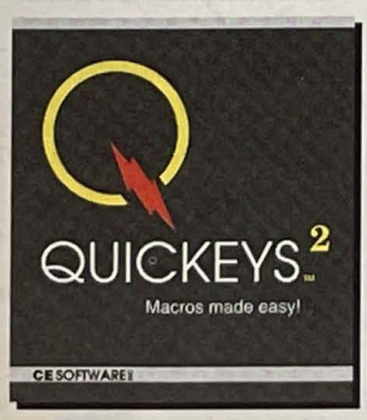

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Step right up to System 7.0

Learning System 7 is no day at the beach, but System 7 savvy can be just a step away with the right training course, and luckily there's a variety to choose from.

By Mitzi Waltz

System 7 is not something to walk into blindfolded. Most users will need six hours of training before they're fully productive with the new system, according to Apple, and system administrators and network managers may need much more.

Nor will all employees benefit from the same type of training, according to Harry Lee, president of Gestalt Systems Inc. "Some people are just getting into the Macintosh, so System 7 is the first system they'll be learning," Lee said. "Some have been using System 6, [so they] don't need an orientation to the Macintosh per se. Other users want to know a lot about configuring their Macs."

The right course. Appropriate courses for these three types of users are on Gestalt's menu. The company also offers courses for managers, system administrators and network administrators, including a course that covers the logistical and financial decisions involved in switching to System 7.

One federal employee who took Gestalt's "Making the System 7 Decision" course said it was just right for her needs. "We wanted to know how System 7 will affect our Novell server," she said.

Once the decision is made, trainers must address when and how to make the transition, said Bruce Dunnan, vice president of sales and marketing for Jay-Martin Consulting. "If you're going to make a step-by-step transition as opposed to converting everybody simultaneously — and that's generally the recommended approach — the obvious issues are [things like] printer drivers and network compatibility issues," he said. "You don't want to have people spending hours re-initializing printers because everybody's using different drivers."

Consequently, Jay-Martin offers seminars on making the switch, in addition to seminars for end users, network administrators and in-house trainers.

In-house programmers. Those who write custom applications might turn to a company such as Bear River Institute, which specializes in courses that delve into the intricacies of such things as database programming.

"All of our existing courses are either ready for System 7 right now or they soon will be," said Bear River President Anthony Meadow. The company also is introducing a three-day System 7 class so that in-house programmers can get a jump on development, he added.

At $13,600, the cost for Bear River's on-site three-day course is not cheap. For some companies, however, it may be a bargain if costly software revisions are prevented.

"The most difficult thing about System 7 is that it is simply overwhelming," Meadow said. In fact, he said, Volume 6 of Apple's "Inside Macintosh" doesn't cover everything programmers may need to know. "There's probably 700 more pages of documentation that's not in the book," he said.

School of hard knocks. Training firms can even do some of the dirty work for you when it comes to one of System 7's knottiest problems: determining which software packages, utilities, extensions and networking devices are truly compatible with the new system. At San Francisco's Center for Electronic Arts, for example, compatibility testing comes before classes. "Things crash often enough as it is," said President Harold Hedelman. "The current version of MacroMind Director doesn't conform, for example. I can't install it until I know it's working, or the students will be crashing everything."

The quick fix. For those who can't afford to hire a consultant or travel far, help is available from companies such as MacAcademy. Known for its fast-paced seminars, MacAcademy is adding System 7 to its curriculum of courses held on a rotating basis in medium-size and large cities.

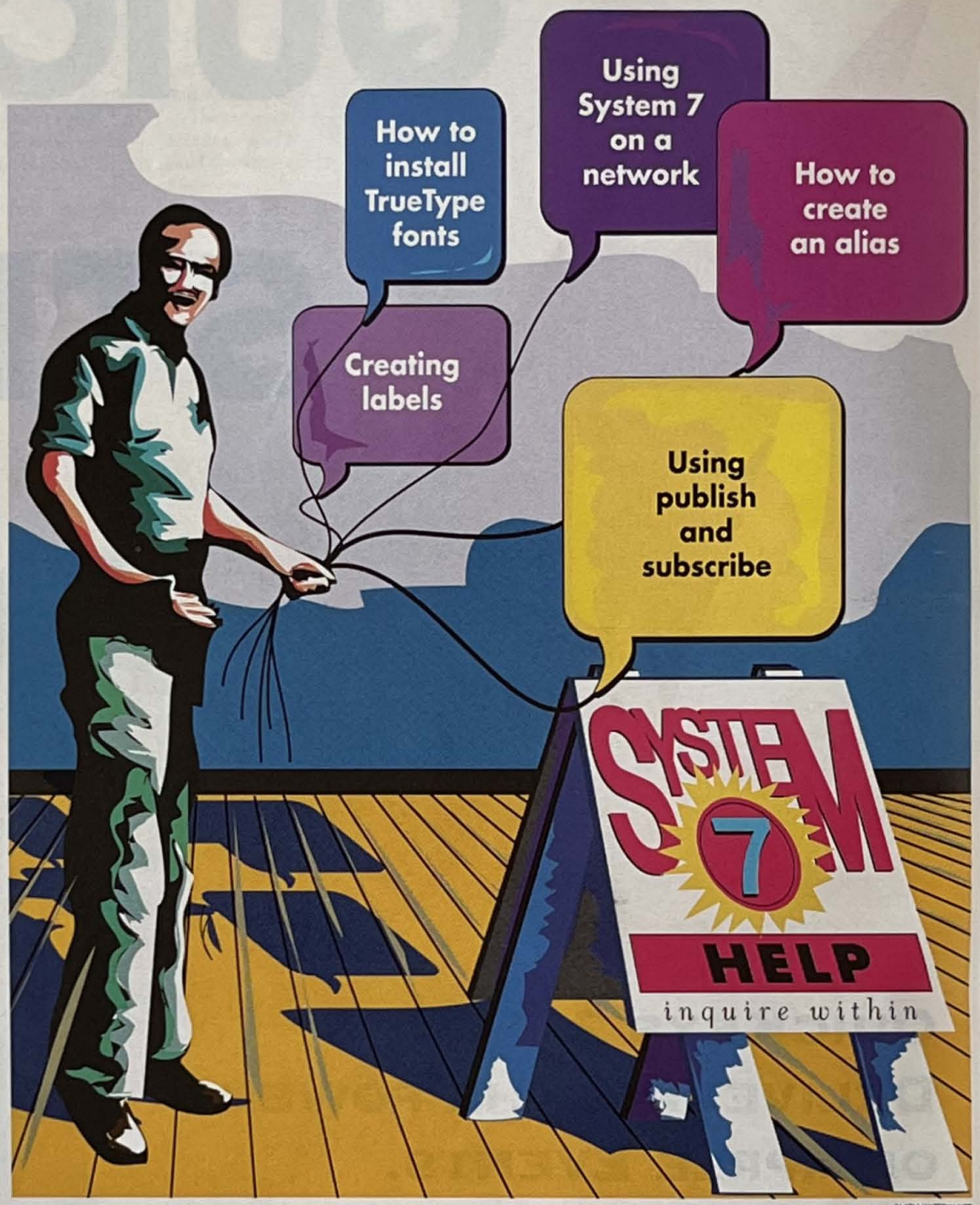
The classes cover installation, changes in desktop organization, the pros and cons of network sharing, TrueType fonts, and more, according to MacAcademy Executive Vice President Clair Crookston. An advanced class will focus on memory management. Mac-Academy also offers a video course, "System 7," for $69.

Personal Training Systems will soon have a two-part self-paced course available combining Mac disks and audiocassettes. "You can read books or watch videos, but you're not really going to learn it unless you're doing the work," said John Uselman, customer-service representative at Personal Training Systems. The company's "System 7.0 Upgrade" course, parts 1 and 2, will cost $79.95 each.

Another way to save money: Send one employee with excellent communication skills for training, then have that employee train the rest of your staff.

Reputable sources. When choosing a trainer, reputation is the key factor. Ask your friends, members of your user group or your computer dealer for suggestions. Apple also may be of assistance: The company is providing referrals to a long list of authorized dealers who offer training at (800) 732-3131, Ext. 300.

As a final precaution, ask the prospective trainer for a list of references — and call them before making a decision. Ask if the training was satisfactory, on schedule and worth the price. When the subject is as complex and important as System 7, it's imperative to shop around. □



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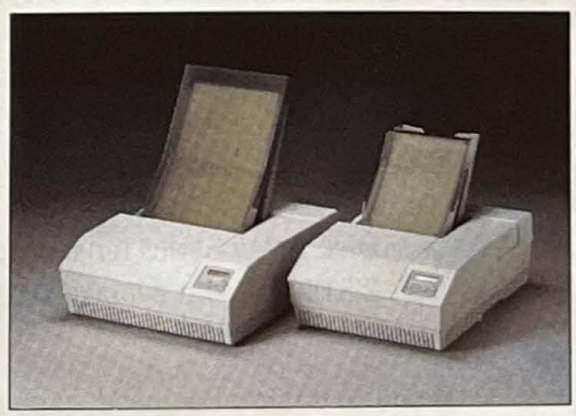

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fax (703) 471-6404

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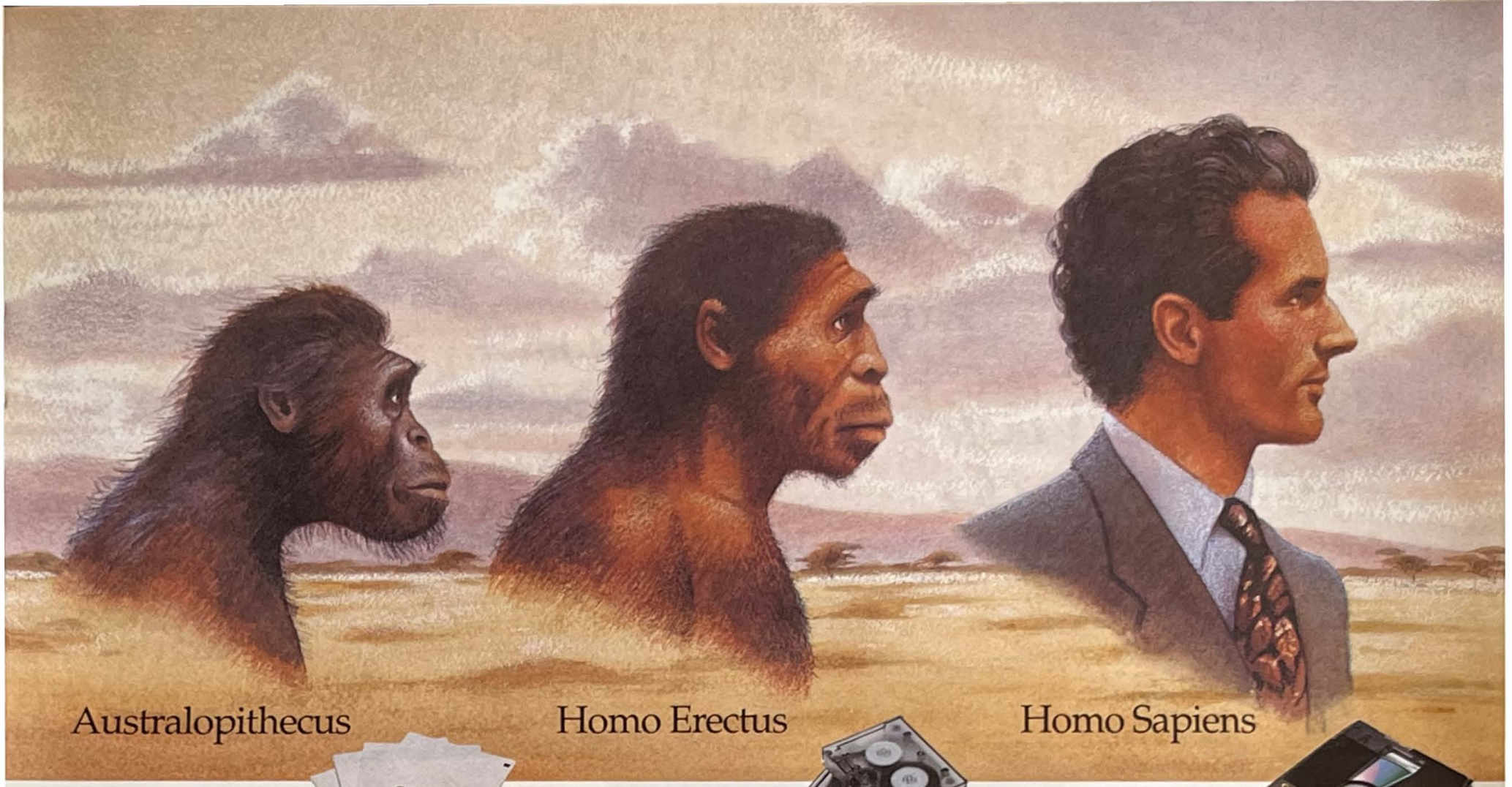

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9 out of 10 Mac spreadsheet users use Microsoft Excel. What are we doing wrong?

Tell us what's on your mind and it could end up on your screen.

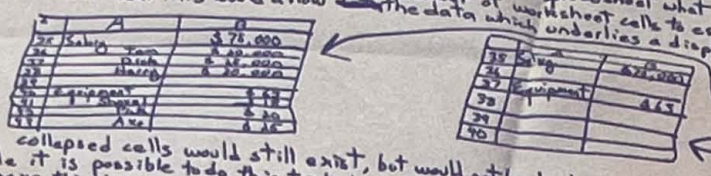
System 7.0 support

Sincerely, Ellen Rice

9 out of 10 Mac spreadsheet users use Microsoft Excel. What are we doing wrong?

Tell us what's on your mind and it could end up on your screen.

"Collapsing Cells": Collapsing cells would be to a spreadsheet what outlining is to a word processor. A "Collapse" command would allow a number of worksheet cells to essentially disappear and become part of a "header" cell. This would allow the data which underlies a displayed number to be kept with that number, but not (necessarily) shown.



The collapsed cells would still exist, but would not be displayed or printed unless an "Expand" command were used. While it is possible to do this trick by setting row heights to zero, it would be slick to have this be an automatic feature.

Sincerely, John Broadbent, Golden Valley, Minn.

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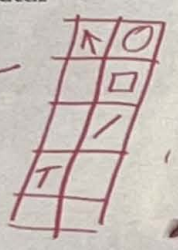

Microsoft
Making it all make sense

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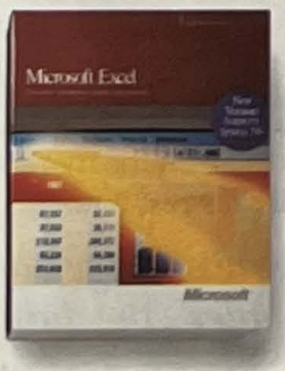

Betsy Mill put it all in perspective when she wrote to us, "I love [Microsoft] Excel as much as my microwave oven but no love is perfect."

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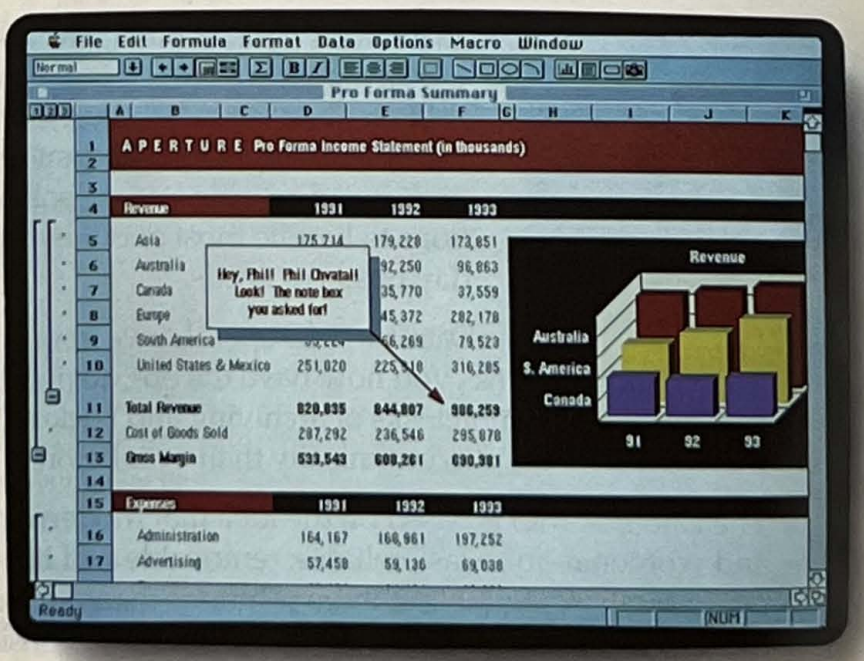
The new Toolbar,™ for instance, reduces common, time-consuming tasks down to one step.

Highlight a row or column of numbers, hit the Σ button (that's Autosum™),


File Edit Formula Format Data Options Macro Window
Pro Forma Summary
APERTURE Pro Forma Income Statement (in thousands)
Revenue 1991 1992 1993
Asia 175,714 179,220 173,651
Australia 92,250 96,863
Canada 35,770 37,559
Europe 45,372 282,178
South America 66,269 79,523
United States & Mexico 251,020 225,318 316,285
Total Revenue 820,835 844,807 986,259
Cost of Goods Sold 287,292 236,546 295,878
Gross Margin 533,543 608,261 690,381
Expenses 1991 1992 1993
Administration 164,167 168,961 197,252
Advertising 57,458 59,136 69,038
Hey, Phil! Phil Chvatal! Look! The note box you asked for!
Revenue
Australia
S. America
Canada
91 92 93
Ready
NUM

Yes, Paul, a single button now lets you access 68 chart types, 24 of which are 3-D. You can incorporate these right into your worksheet, along with text and data. And notice the outlining feature on the left? Go nuts.

and *voilà* – it all adds up.

Do quick, push-button formatting.

Use outlining features to collapse

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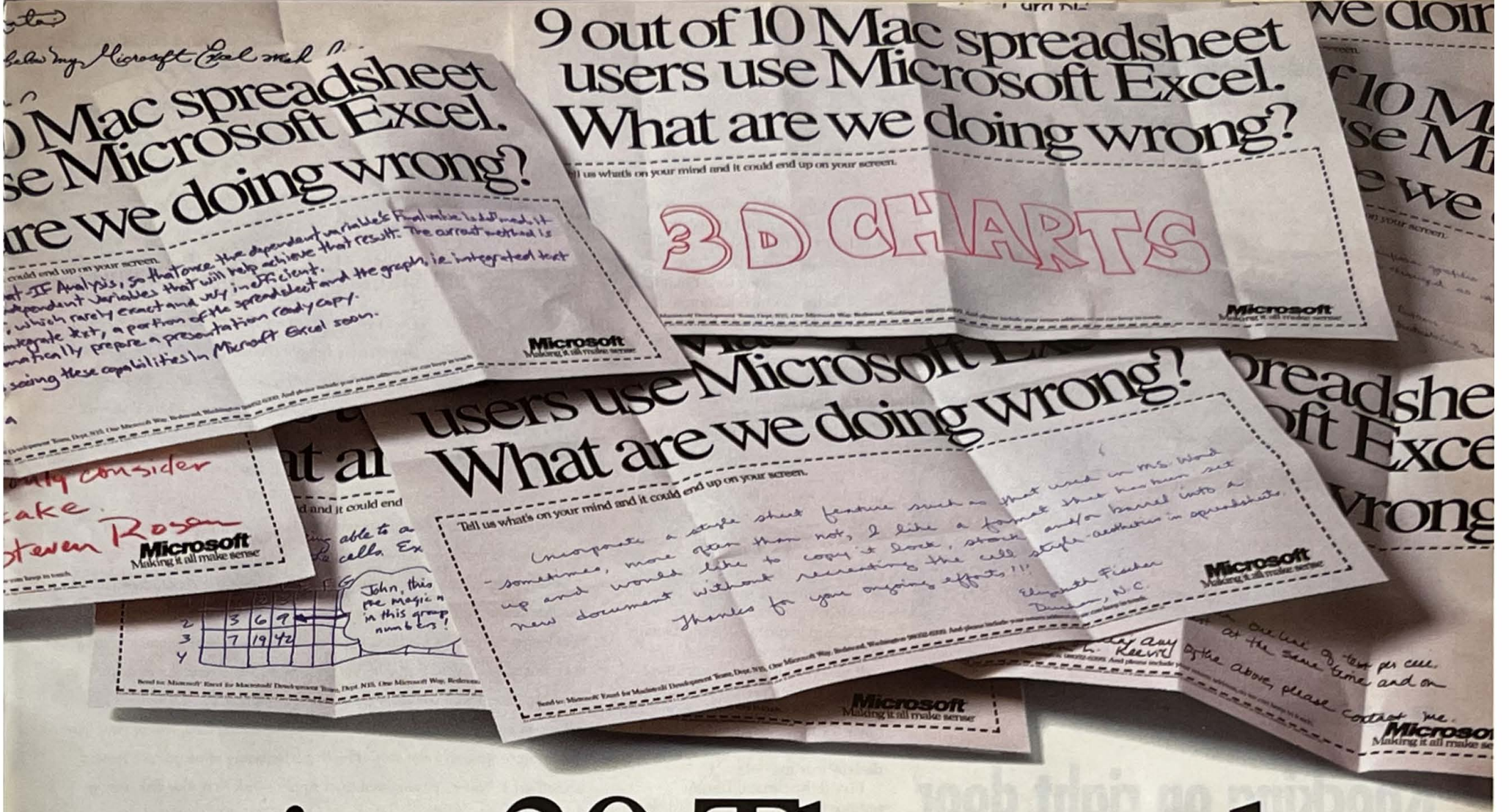
9 out of 10 Mac spreadsheet users use Microsoft Excel. What are we doing wrong?
3D CHARTS
Microsoft
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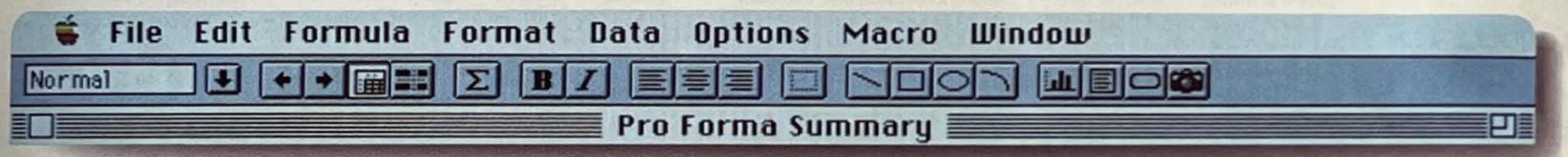
version 3.0. The result respondence course.



Take a look at the new Toolbar. In one step, you can now access style sheets, outlining features, Autosum, formatting options, drawing tools, charts of all kinds and macros. Go to town.

or expand worksheets without having to create multiple files.

As for charting, we took our cue from Paul Woods, who began his letter with the salutation, "Charts, charts, charts!" Hey, Paul – check out the picture and caption for the full scoop.

Did we mention that you can consolidate up to 255 worksheets at a time, regardless of format?

Or the Goal Seek feature, which lets you put in the total you want and works backwards from there to fill in the variable you need?

Or the fact that this is the first System 7.0 application available?

Plus, you can update to version 3.0 for $129. If you acquired your current version of Microsoft Excel on or after 12/7/90, the upgrade is only $50.* Call (800) 541-1261, Department Q84, to find out more.

By the way, Bryan Larson: we said hi to Bill for you. He sends his regards.

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GORDON STUDER

MacInTouch RIC FORD

Knocking on right door to make room for 7.0

By creating custom partitions, you can recover megabytes of extra space on Apple hard disks. And, in other news, Naoto Horii's MaxAppleZoom statement reaches the states.

BUGS & TIPS

Room wanted. One of the hurdles to installing System 7.0 is finding extra space on the typical, crowded hard disk. The demands of virtual memory make the problem even worse.

A little-known area of Apple's disk-formatting software may help. Ordinary formatting appears to use a sort of "lowest common denominator" algorithm, and delving into custom partitions can free up an extra few megabytes of disk space. Apple's HD SC Setup utility has had these partitioning capabilities since Version 2.0, but they are not commonly used outside of A/UX.

Reader Andrew Solmssen found that Mac IIsi machines, for instance, which were delivered from Apple with pre-formatted, 80-Mbyte disks, hid an extra 2 Mbytes of free disk space outside the main partition.

I did some testing on a Quantum Pro80S drive, which is supplied as an internal drive by Apple in many Macs, and I found more than 3 Mbytes of extra room, hidden by the confusing set of formatting options and poor interface.

Custom work. The first step in using custom partitions with Apple disks is to get into the partition display panel to see how space is allocated on your particular disk. Do this by selecting the Partition button from the main HD SC Setup panel, then choosing the Custom button. A graphic display shows both free space and allocated space, and you can click the Details button for extra information.

If you wish to modify partitions after examining the configuration, you should quit the application and make a complete backup of the disk first. Changing partitions will destroy existing data.

I tried the three different options for formatting the disk as a single Macintosh hierarchical file system volume. (HD SC Setup cannot divide a disk into multiple Macintosh volumes, although it can create multiple A/UX volumes.)

The standard Initialize button produced a 75-Mbyte volume (as measured by Finder 7), with more than 3 Mbytes left over as wasted free space. Curiously, selecting Partition, then selecting Maximum Macintosh produced the same result.

By selecting Custom Partition, however, I was able to delete the existing partition and manually drag out a new partition that was 78.7 Mbytes in size (selecting Macintosh Volume as its type).

Leaving 20 Kbytes or so (40 blocks) as a safety margin (and I don't know of any specific reason to do this), you can gain a lot of useful space with custom partitions.

Just be sure to back up the disk before experimenting, use Initialize before partitioning (to test for bad blocks) and restart the computer after making changes (to be safe). The only disadvantage I can see is that you will not be able to restore your new 78-Mbyte backups to a disk that is formatted at the smaller 75-Mbyte size.

ISSUES & TRENDS

MAZ update. MaxAppleZoom is still a lively topic on the on-line services (see MacWEEK, July 16). Author Naoto Horii released statements explaining his motives, defending himself and at the same time apologizing for putting an undocumented expiration date in the program. In the meantime, Kevin Mitchell created an application for patching MaxAppleZoom 1.31 to eliminate the expiration date. (Mitchell is the author of GIFconverter, a shareware application.)

As this column was being written, MaxAppleZoom 1.42 appeared on-line. The new version is free of time bombs or expiration dates, according to the author. It also incorporates significant enhancements, including a fix for noise lines in black-and-white mode, a virtual-portrait mode, multiple-monitor support, and compatibility with Apple's 4•8 and 8•24 cards. The program now requires 32-bit QuickDraw.

MaxAppleZoom still does not support Mac internal video (in the IIsi, IIci, LC), nor Apple's 8•24 GC card. It is also incompatible with A/UX.

Horii slowly seems to be reaching an equilibrium with the shareware user community, but it will take time to rebuild the trust that people lost after the initial deception. The best result of the MaxAppleZoom controversy may be the deep and wide-ranging discussions of important shareware issues, which are taking place on networks around the world.

You can download Horii's statements, patches and MaxAppleZoom itself from the central download library in Zmac. □

Comments on MacInTouch are welcome at 7 Parmenter Ave., Maynard, Mass. 01754. Phone (508) 897-2621. Address electronic mail to 72511.44@compuserve.com from the Internet; to 72511.44 from CompuServe; to MACWEEKBOS from America Online, Delphi and GEnie; to RICFORD from MCI Mail or Connect. From AppleLink, 72511.44@compuserve.com@INTERNET# is the current address.

Join us on-line in the MacWEEK Forum by typing GO ZMC:MACWEEK on CompuServe or Zmac.

Ask David Ramsey

Does defragmenting improve performance?

Q: *I've been using my Mac for more than a year and recently bought a utility package that included a disk-defragmenting program. I used the program, but it reported that only 3 percent of my disk was fragmented, and I didn't notice any performance increase after using it. Are these things for real?*

A: The results you got are not unexpected because most Mac users will rarely need to defragment their hard disks.

Some explanation: A fragmented file is one whose data is scattered across the disk, rather than being in a single, contiguous section. Fragmented files take longer to read and write to because the disk head has to move to different areas of the disk to find different parts of the file — and the Mac can't do anything except wait while the disk head is in motion.

Even though you've been using your Mac for a long time, few of your files were fragmented, so there wasn't much performance to be gained. According to Karl B. Young, unsung author of Apple's Disk First Aid, disk defragmenting is rarely necessary unless your disk is so full you must often resort to deleting files just to make room.

Q: *We frequently have storms in our area. Will a power strip with a built-in surge suppressor be adequate protection?*

A: Listen, there's nothing you can put between your computer equipment and an electrical outlet that will protect against a close lightning strike except a lot of open space. Lightning can destroy anything that's plugged in, even if it's turned off.

For more-typical power-line surges, spikes and whatnot, the suppressors built into power strips and plug adapters will work. They can, however, deteriorate over time (and can be used up by handling one large surge), and few power strips have any way of letting you know when your protection is gone.

Real protection can be had with an uninterruptible power supply — basically, a large lead-acid battery that your computer runs from and that is kept charged by wall current — or an isolation transformer. Both solutions are expensive, typically running to several hundred dollars.

Please send questions to David Ramsey on CompuServe: 76702,335 or to Ask David Ramsey, c/o MacWEEK, 301 Howard St., 15th Floor, San Francisco, Calif. 94105.

The Help Desk

Hidden viewing options in Finder 7.0

The Clean Up command in the Finder's Special menu has always had some more-or-less secret options. Under System 6, holding down the Option key while selecting this command force-fits all the icons in a window into an orderly pattern. Under System 7.0, Clean Up options let you sort icon or small icon views by any other available viewing criteria (date, size, label, etc.).

First, you select one of the non-icon views from the View menu. Then you switch to one of the icon views — poof! The icons lose their sorted order. But if you then hold down the Option key while selecting the Clean Up command, the icon view will be sorted by whatever criteria you had chosen for your earlier list view.

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Script Manager

QuicKeys 2.1 blazes the Apple-event trail

STEVE MICHEL

At first glance, it might appear that CE Software Inc.'s QuicKeys 2.1, the first System 7-savvy version of that macro utility, is all dressed up with nowhere to go. Its Apple-event support is far broader than that offered by other programs currently shipping. Big chunks of it are designed to work with programs that go beyond the required set of Apple events — software that doesn't exist yet.

QuicKeys is important exactly because it blazes new ground; it gives users a taste for the potential of program linking and gives them a tool for exploring Apple events with other programs. QuicKeys' breadth of Apple-event support gives developers a model to follow and some incentive to include full-fledged Apple-event support in their programs.

Custom events. First, QuicKeys lets you define custom Apple events to send to other programs. For example, the Extensions manual, which is part of the QuicKeys documentation, tells you how to send a dosc (do script) event to HyperCard or any other program. QuicKeys 2.1 is the first commercial tool with this capability. Although the manual doesn't go into it, you also can send eval (evaluate) events to HyperCard 2.1, and tell QuicKeys what to do with the value returned by HyperCard. It's unfortunate that since HyperCard does not let you send custom Apple events without an XCMD, HyperCard can't return the favor and send events to QuicKeys. Fortunately, the QuicKeys package includes an XCMD that lets HyperCard trigger QuicKeys macros, which is a work-around.

QuicKeys also can respond to Apple events through a small (about 100-Kbyte) application called CEIAC. Using a special-purpose application such as CEIAC is necessary because System 7 extensions, such as QuicKeys, cannot themselves receive Apple events. QuicKeys can execute a specific QuicKey macro, type specific text or select a specific menu item in response to an Apple event coming from any application, even if that application is running on a different machine.

QuicKeys 2.1 also supports the as-yet-unreleased UserLand Frontier from UserLand Software Inc. QuicKeys lets you send scripts to Frontier, a capability similar to HyperCard accepting dosc events.

User terminology. Another first in QuicKeys 2.1 is its support for the so-called Apple-events user terminology. This allows one program to look for special resources (aete and aeut) in another to determine which Apple events that program supports and what arguments they take. The definition of these resources is a recently announced addition to the way Apple events should be supported, one not found in any shipping program I'm aware of.

As these resources are added to Apple event-aware applications, users of scripting and macro applications should have a much easier time figuring out what they can do with their new tools.

The other important, if somewhat esoteric, addition to the Apple events world is a set of object specifiers. This new structure, known as the "object model," is a way to define new Apple events and gives different kinds of applications a standard vocabulary to use when referring to chunks of data. For example, a database could ask a word processing program for the first paragraph on the seventh page of the document in the first window.

It's unclear how long it's going to be before a wide set of applications supports this new vocabulary, but it's important for several reasons. Its main advantage is in giving developers a way to make data in their programs available to others without having to publish their file formats or write specific drivers for different sets of applications. Programs that support the Apple-events object model will, in essence, come with a built-in set of tools for accessing and sharing their data.

Encouraging others. One of the key benefits to users from CE Software releasing QuicKeys 2.1 on the leading edge of Apple events is that it should help to give other developers an incentive for supporting flexible Apple events, user terminology and object specifiers in their applications. If nothing else, QuicKeys 2.1 should drive users to ask developers to support these things in their software, and it should give developers a clue as to what people want in System 7 support. In many ways, it's the most important System 7 utility to ship so far. □

If you have any user scripting comments or products, questions or answers, send them to me at MacWEEK, CompuServe/ZMAC (72511,151), or AppleLink (SMICHEL).

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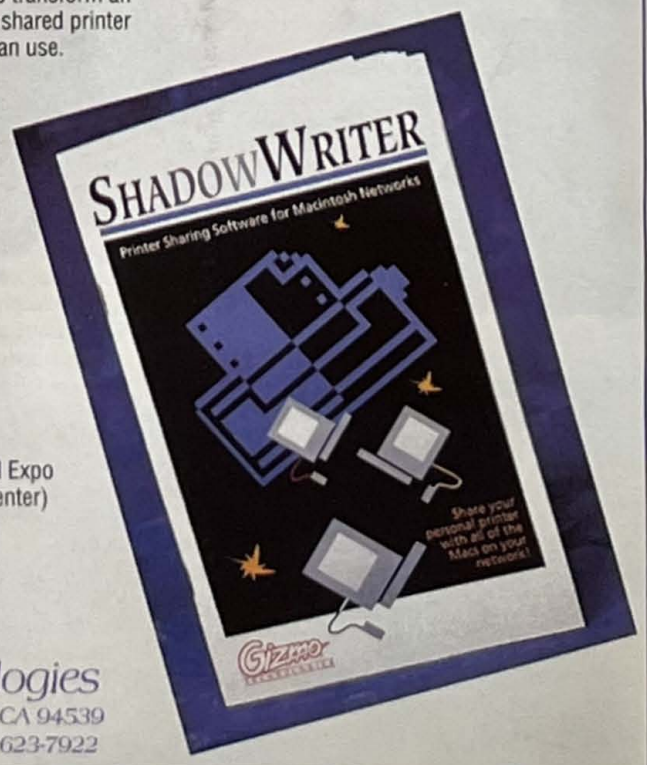
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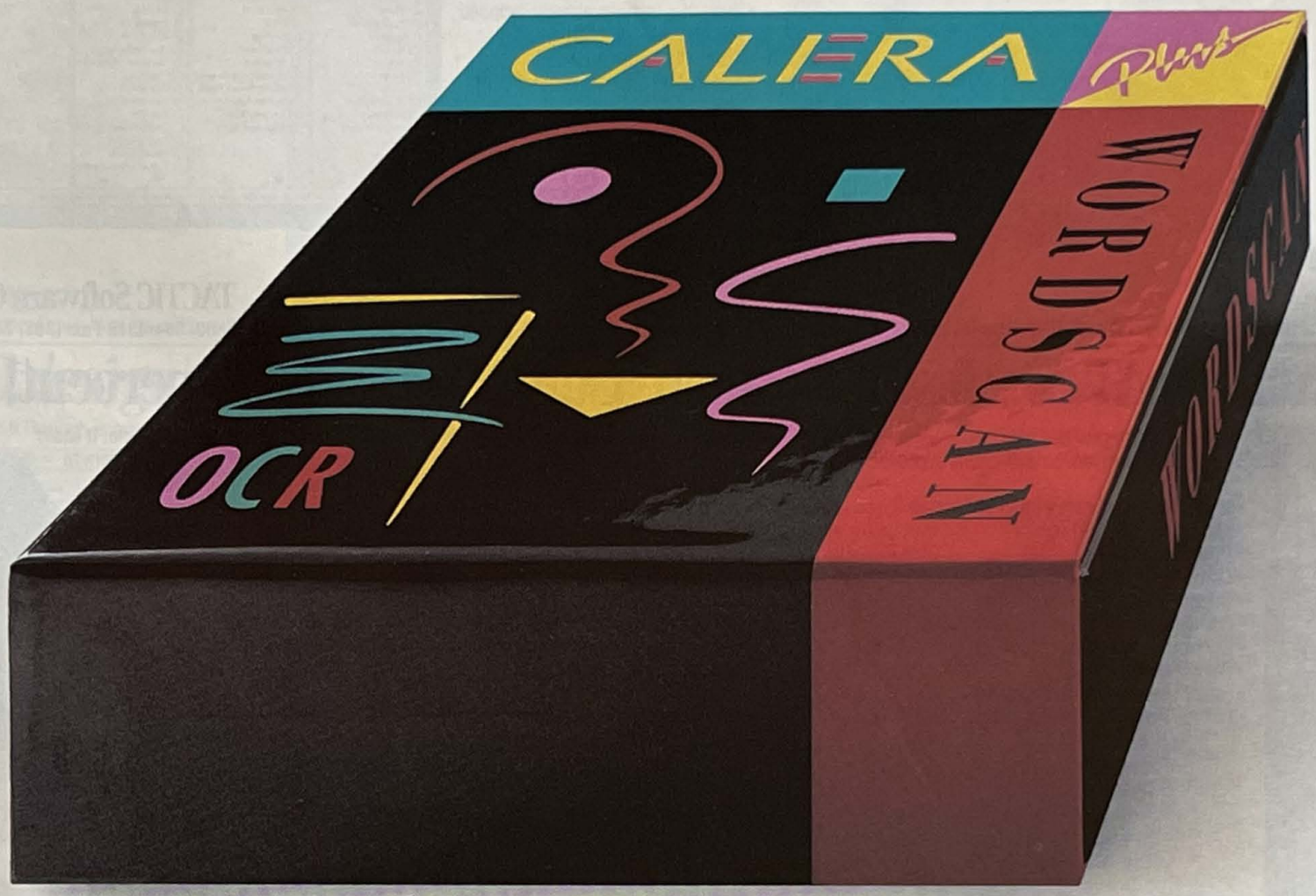

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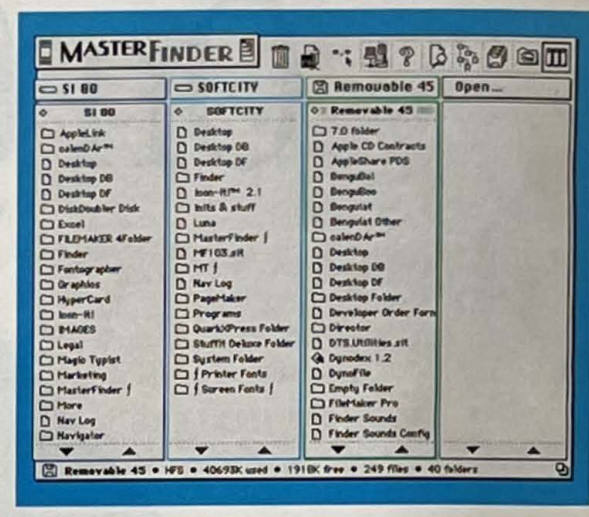

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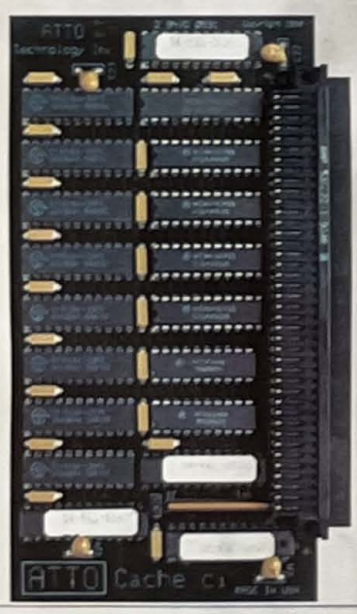

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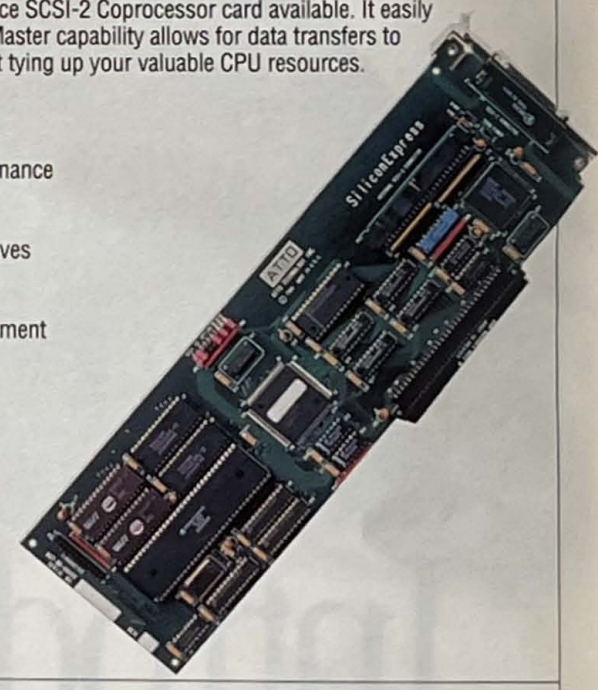

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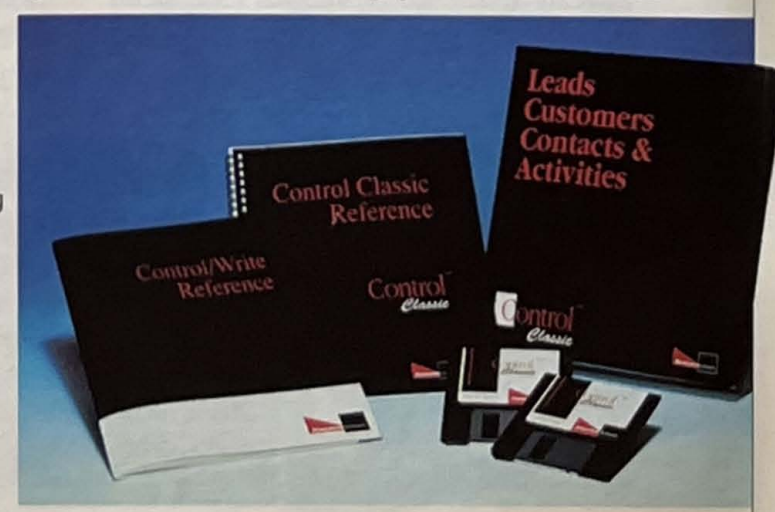

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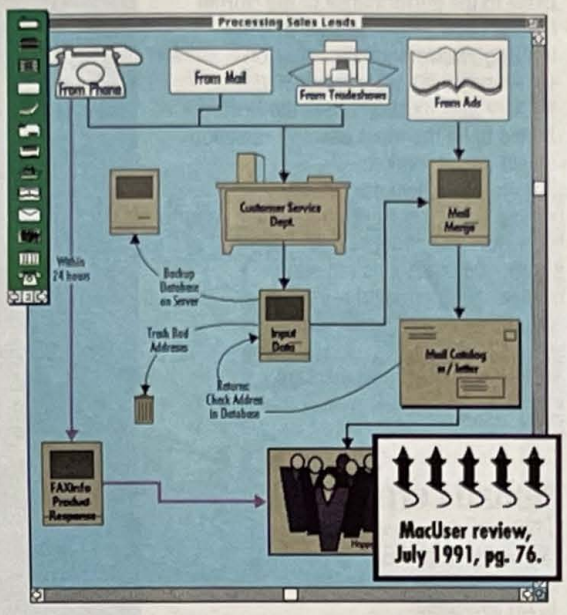

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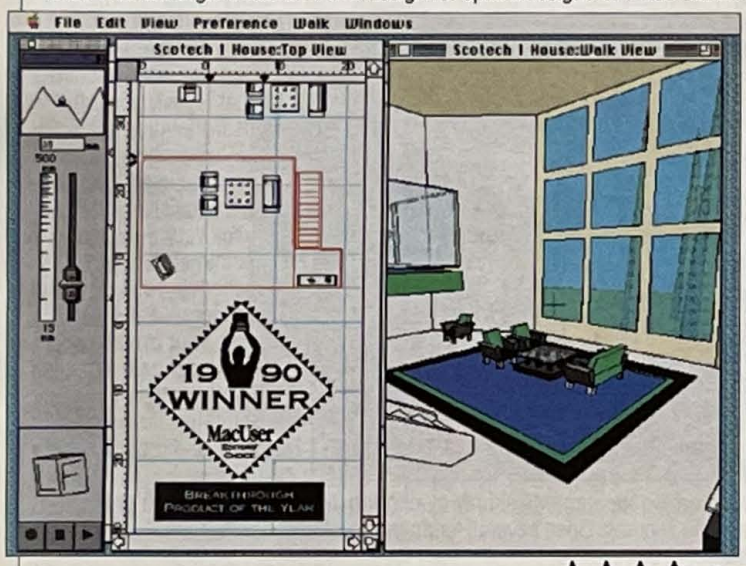

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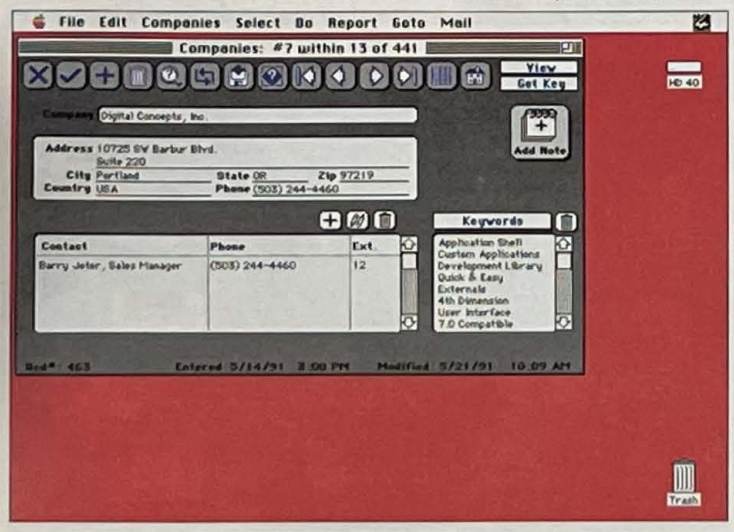

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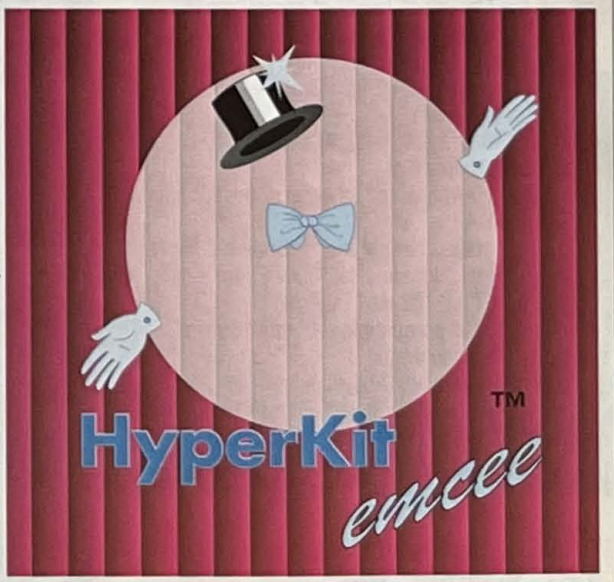

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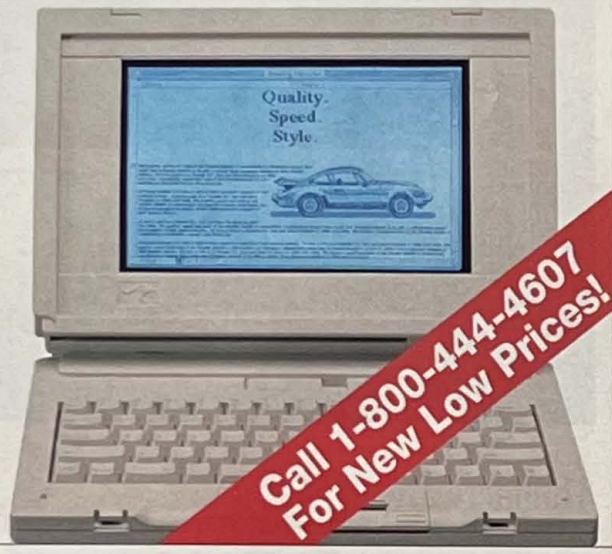

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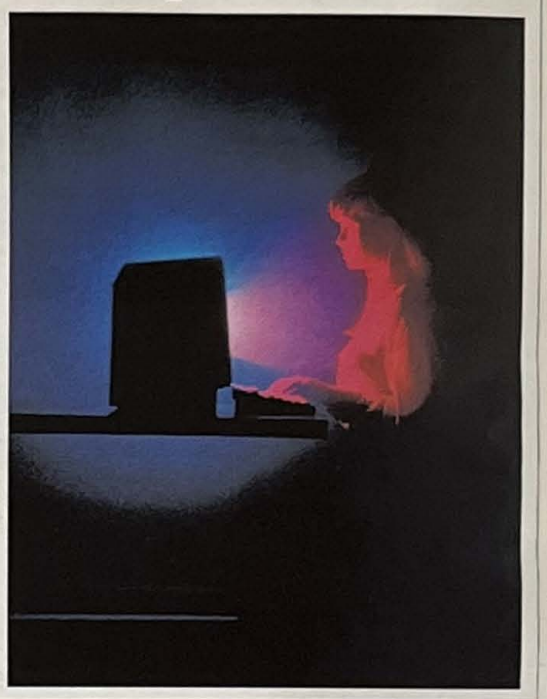

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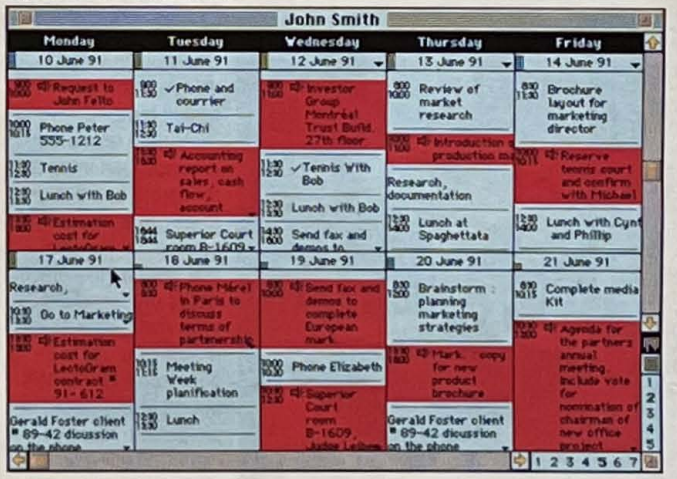

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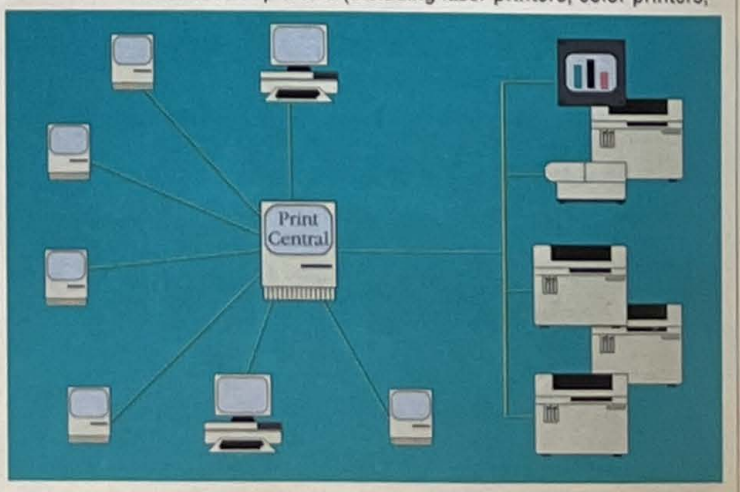

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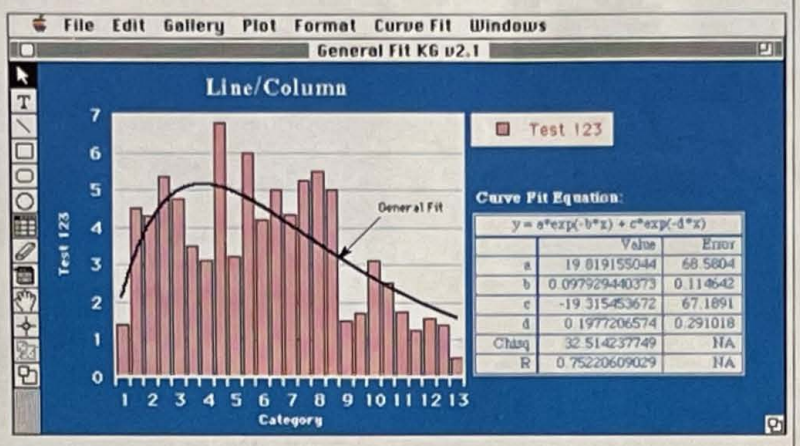

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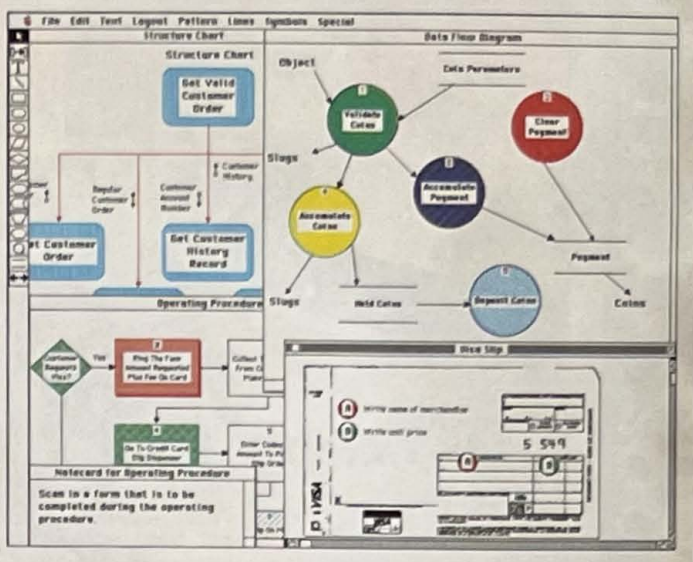

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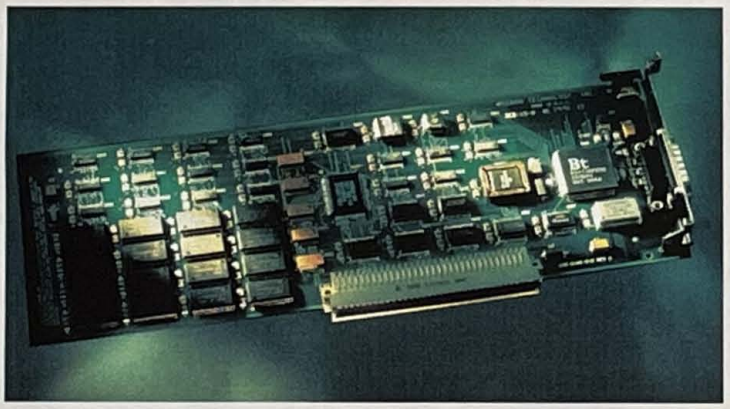

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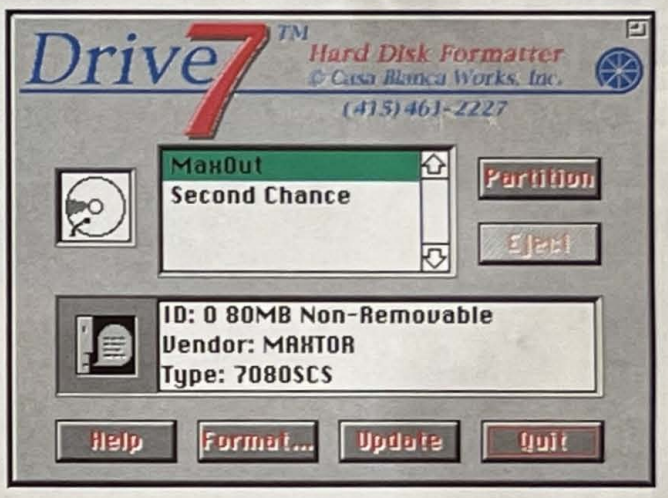

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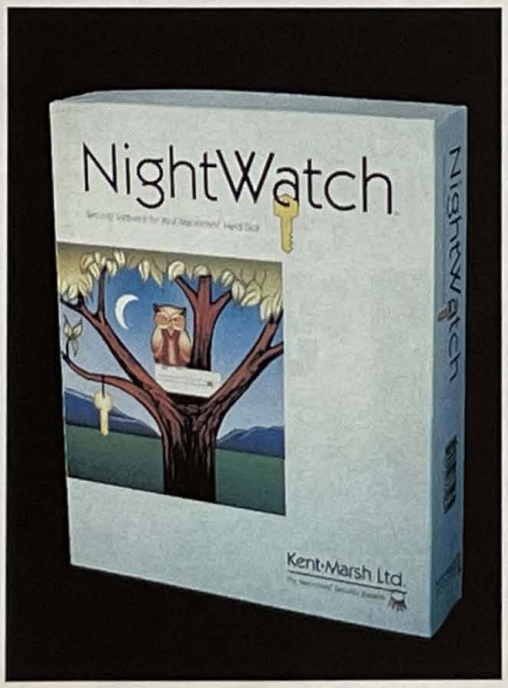

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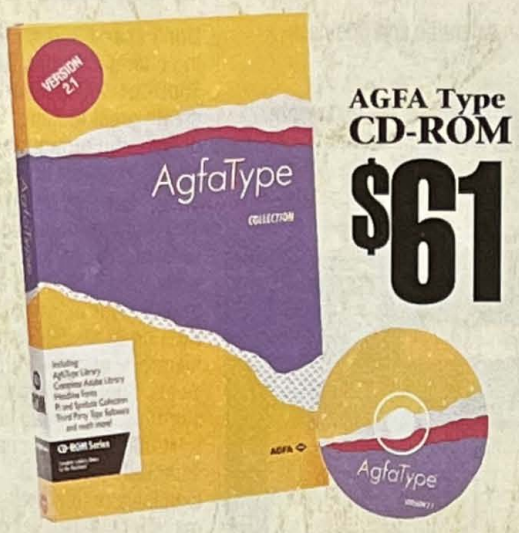

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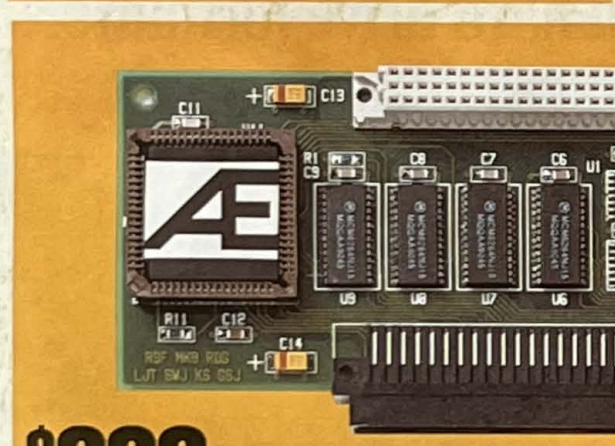

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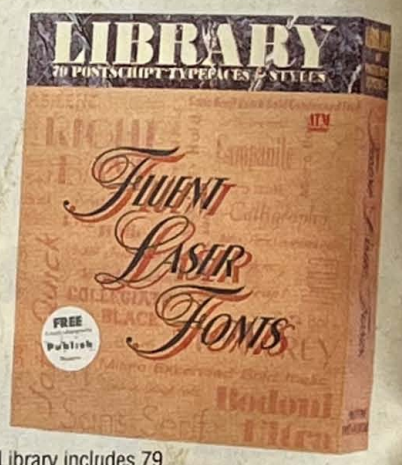

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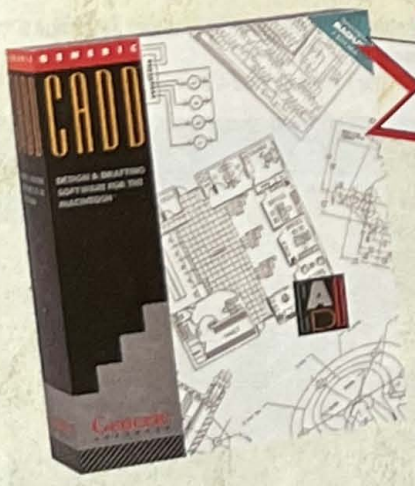

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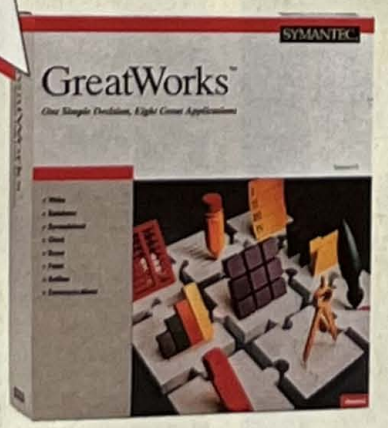

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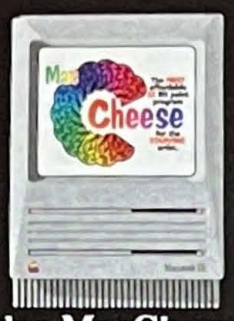

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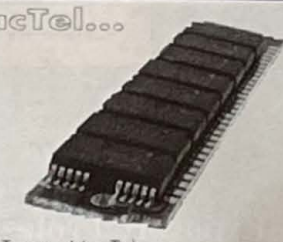

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5 **Gold traces and contacts** used to ensure durability and longevity.

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• Call for Current Prices •

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NEW
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MacTel offers the most complete line of Ethernet boards. **100% Apple Compatible** using one chip-set solution, diagnotic software, Phase 1 & 2 in-one driver, **7.0 Compatible** and more. Boards available for Mac II family, Mac SE, Mac SE/30, Mac II SI & Mac LC (w/ Thin or Twisted Pair connectors).

When Ordering, Specify Thick/Thin or Twisted Pair !

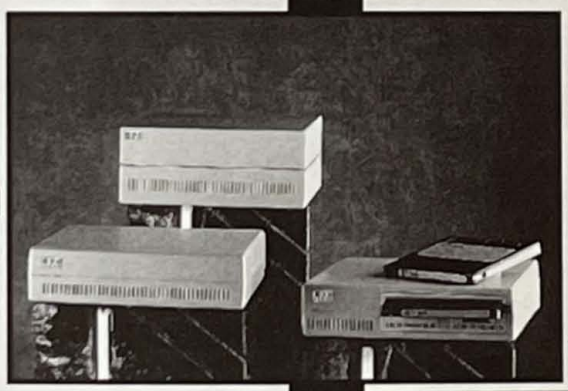
→ **MacTel TnT Ethernet** *(all versions)* ..... $ 199

→ **MacTel TnT-Buse**: *MacSI or SE/30 PDS adaptor* ..... $ 299

Quantum Drives Index 3.5"

All INDEX drives include MacTel HD Utilities and 14 Mb PD. **MacTel HD Formatter V.3.0 features: password, partitioning, A/UX support.**

2 YEAR WARRANTY !



		internal		external
52 Mb	12 ms	$ 259	Slimline	$ 339
105 Mb	12 ms	$ 399	Slimline	$ 479
210 Mb	12 ms	$ 719		$ 799
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320 Mb	16 ms	$ 1199*	$ 1299	
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640 Mb	16 ms	$ 1499*	$ 1599	
650 Mb	10,7 ms	$ 2099*	$ 2199	RUNNER II
1,2 Gb	16 ms	$ 2449*	$ 2549	

*Fits only MacII,MacIIx & MacIIfx. All **INDEX** external Harddrives are supplied with universal power supplies, for world-wide adaptability.

1.2 Gb was rated 4 mice by MacUser

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NEW
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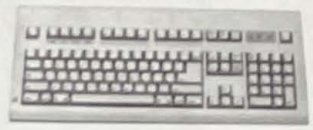
French, German, and Swiss Keyboards delivered with system software !



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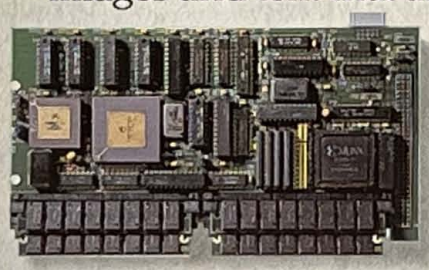
Mobius 030 Displays with built-in acceleration for the Classic and SE. Acclaimed within the industry for their "remarkably low price," they start at $1095.



Our built-in 25 MHz 030 Accelerator will make your entire Mac go faster. Six times faster. Or faster yet with our 68882 math coprocessor.

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• **ATM FONT RENDERING TECHNOLOGY.** Raw characters are built 4 to 5 times faster.

Features available through software applications:

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• **FORMS SUPPORT.** You can define a base form whose representation stays cached in the printer.

• **COMPOSITE FONTS.** Handles very large character sets and non-horizontal writing modes."

Riel Provencher, President
Software & Hardware That Fits

Introducing...
The first PostScript® Level 2 printer on the market!

- **RISC processor**
- **9 pages/minute**
- **500% faster***

ONLY $1995!

RealTech Laser	QMS 810 Turbo w/HD	Apple NTX w/HD	QMS 410	TI MicroLaser 35	Apple Pers'l LaserWriter
Street prices:					
$1995	$3995	$4295	$1995	$1749	$1995

**On average, the RealTech Laser performed 4 to 5 times faster than other PostScript® laser printers in its price range.*

The RealTech Laser uses a RISC-based controller (Reduced Instruction Set Computing). RISC is the new generation of processors for speed and performance.

It was specifically designed for sophisticated graphics and font-intensive applications...and it's especially suited to networks!

Versatile, with PC compatibility; its 3 interface ports can be used at the same time. Includes Appletalk® RS-422, IBM PC parallel, and RS-232-C serial interface ports (can be assigned either PostScript or LaserJet II commands). Auto switches between interfaces, and spools files in a real-time basis. A Hewlett-Packard LaserJet Series II emulation allows use with non-PostScript applicatons software.

INCLUDES A SCSI PORT FOR A HARD DISK!

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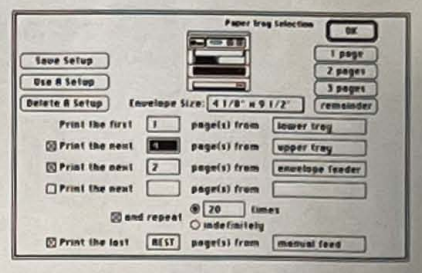
Paper Tray Selection
OK
Save Setup
Use A Setup
Delete A Setup
1 page
2 pages
3 pages
remainder
Envelope Size: 4 1/8" x 9 1/2"
Print the first 1 page(s) from lower tray
Print the next 5 page(s) from upper tray
Print the next 2 page(s) from envelope feeder
Print the next page(s) from
and repeat 20 times
indefinitely
Print the last REST page(s) from manual feed

Tired of hopping up and down to change the paper in your printer?

Now you can stay seated while you specify up to 4 paper changes!

Save your energy for thinking instead of switching paper in your printer trays. Print a two-page letter with letterhead from tray one and plain paper from the manual feeder – all without getting up from your chair. Add our optional second tray and envelope feeder, and you can specify up to 4 paper changes without moving anything but your mouse.

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YES, we take trade-ins on all Apple LaserWriters:

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- **LaserWriter SC: $400 trade-in**
- **LaserWriter IINT: $1000 trade-in**
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Trade-in value depends on the number of pages on the engine and on any problems found with the unit. Unit must be able to run a self-test. Call for more information.

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40 Mhz	1355
50 Mhz	1845
Mac IIci	
40 Mhz	925
40 w/68882	1135
50 Mhz	1635
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RAM Powercard	709
SCSI Powercard	1060
1 Megabyte SIMMS	Call
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Ask about our no-hassle upgrade program for the Mac IIcx.

We can schedule a swap-out of your mother board with the Daystar accelerator that's already installed.

Double or triple your speed with no down time. Now that's service you won't find anywhere else!

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$5139 Mac IIci 14" Trinitron System, 4 Mb RAM, 105 Mb Quantum, Mac 101 Keyboard

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Classic, 4 Mb RAM, 105 Mb Hard Drive	1695
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Mac IIsi B&W Full-Page System, 5 Mb RAM, 40 Mb Hard Drive, Mac 101 Keyboard	3749
Mac IIsi B&W 21" Dual-Page System, 5 Mb RAM, 105 Mb Quantum, Mac 101 Keyboard	4595
Mac IIsi 14" Trinitron, 9 Mb RAM, 105 Mb Hard Drive, Mac 101 Keyboard	4589
Mac IIsi B&W 21" Dual-Page System, 9 Mb RAM, 105 Mb Hard Drive, Mac 101 Keyboard	5039
Mac SE/30 System, 5 Mb RAM, 105 Mb Quantum, Mac 101 Keyboard	3179
Mac SE/30 14" Trinitron 24-bit Color, 5 Mb RAM, 105 Mb Quantum, Mac 101 Keyboard	4429
Mac IIci GS 21" Dual-Page System, 5 Mb RAM, 105 Mb Quantum, Mac 101 Keyboard	5999
Mac IIci 19" Trinitron 8-bit Color, 5 Mb RAM, 170 Mb Hard Drive, Mac 101 Keyboard	7450
Mac IIci 19" Trinitron 8-bit Color, 8 Mb RAM, 170 Mb Hard Drive, Mac 101 Keyboard	7649
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Mac II, IIcx, IIci	Mono	$995
IIx, IIfx, SE30	GS 256	$1479
Mac IIsi	Mono	$1059
Mac Portable	Mono	$1249

$619

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43% brighter than the leading competitor!

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RasterOps

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ColorBoard 24XLTV	3549
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...now only $1299!

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Scanmaker 600ZS Color Scanner (600 dpi). Outstanding image quality in a compact, flatbed design. High resolution scanning in 150 seconds (letter size)

- 16.8 million colors
- 3 scanning passes (red, green & blue filters)
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***SAVE!* Only $1469**

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- Full gray scale capability
- Flat CRT, P4 phosphorus, polished screen
- One-year warranty

CPU	Monitor	Price
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Mac II, IIcx, IIci IIx, IIfx	GS 256	$1079
Mac IIsi, IIci	GS 16	$495
Mac Portable	Mono	$849

$2569

Ikegami 19" Trinitron Color Systems!

The right solution for every budget!

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Microtek Transparency Conv.	1895
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Practical Peripherals 9600SA	$499
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Courier 14.4 V.32 bis	$695
"Fastest V.32 bis", InfoWorld,	*7/1/91*

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16 Pages per Minute!		
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Microtek 600ZS
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Per 45 Meg Cartridge

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Per 88 Meg Cartridge

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$799
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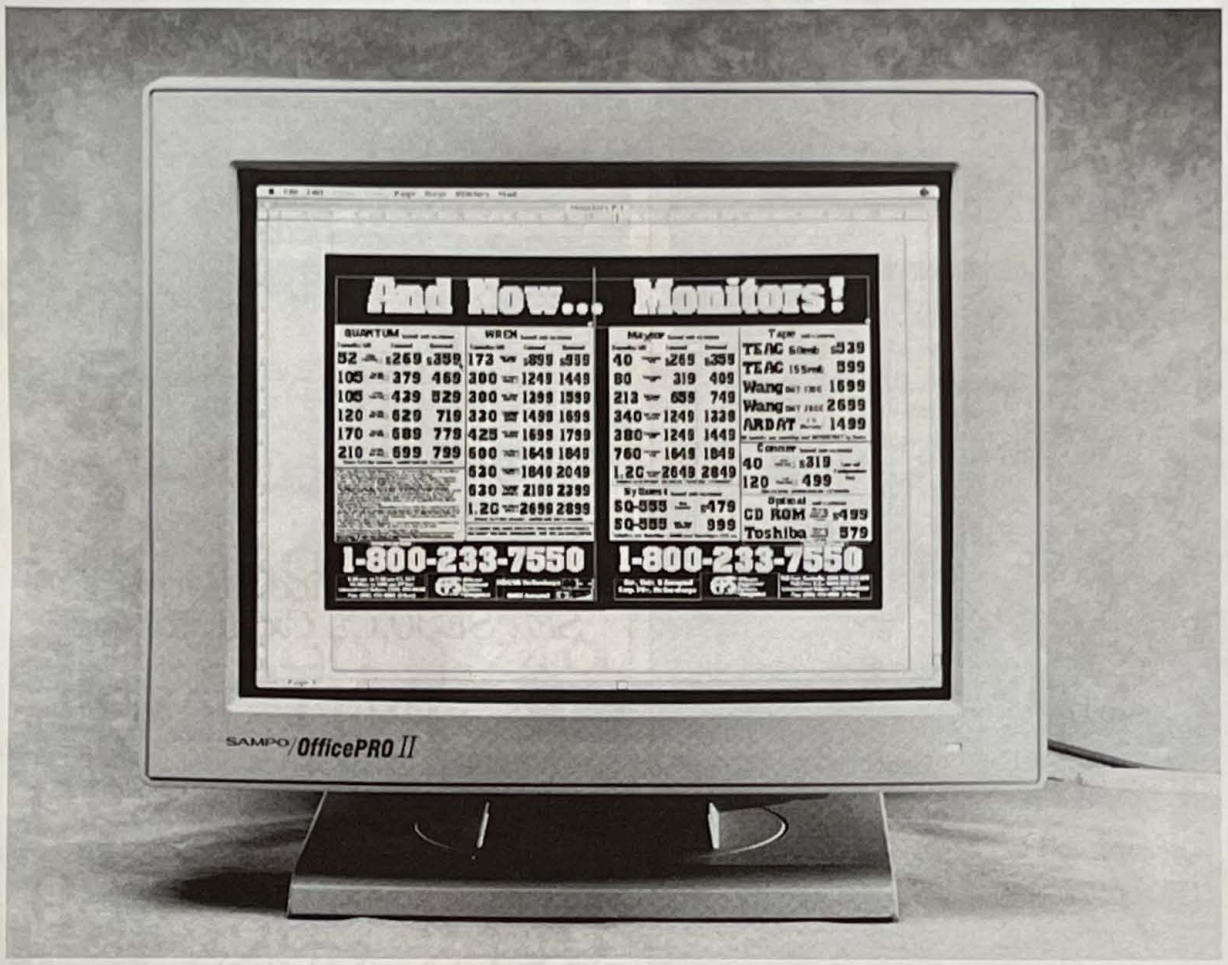

Sampo/Lapis dual page monochrome display system for Macintosh SE, SE/30 and Mac II models

Dual Page Monochrome Display System for Mac SE, SE/30, ci, cx, si, II, IIx, fx

Resolution	1024x768
Tube	19 in. diag.
Display Area	350x275mm
Interface	Lapis
Display	Monochrome
Sweep Vert.	78.2Hz
Sweep Horiz.	63.9Hz
Power Cons.	65w
Voltage	110-230VAC sel.
Cert.	UL
FCC	Class B
Warranty	1 yr.

High resolution black and white Macintosh display system featuring:

19" diagonal monitor with 1024x768 pixel resolution.

Ideal display size for many desktop publishing or CAD/CAM applications.

Full line compatibility with Macintosh "Nubus" machines.

Allows dual screen operation with Mac SE and SE/30 models.

Full System 7.0 compatibility and operation.

Ultra-low cost-to-features ratio.

One year monitor-for-monitor replacement warranty.

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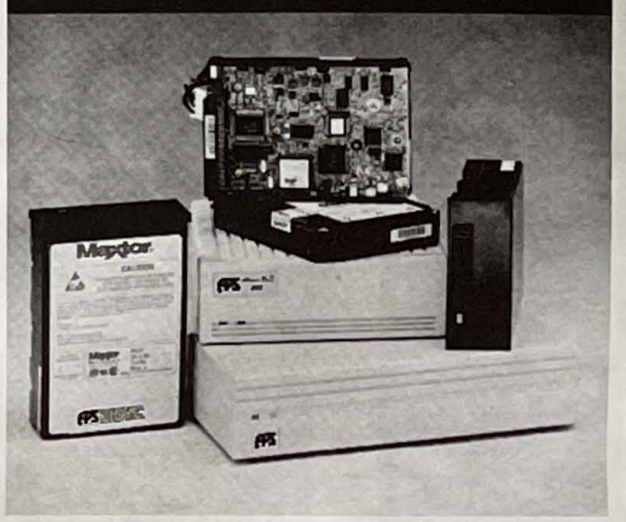
Quantum 210MB w/ WriteCache™ $699

High performance internal for SE, SE30,Ci, Cx, Mac II, IIx, IIfx.

MB	INTL	EXTL
52	$249	$339
105	399	499
120	579	669
170	599	689
210	699	789

For a limited time, with any drive purchase, you can buy Redux, Init Picker or Rival by Microseeds Publishing. Any one, $20; any 2, $33.95; all three, $44.95. Retrospect Remote "10 Pack" available with tape drive purchase for $129.00.

Maxtor 120MB $399



High performance internal for SE , SE30,Ci, Cx, II, IIx Fx.

MB	INTL	EXTL
40	$239	$329
80	299	389
120	399	489
213	659	749
340	1099	1189
535	1599	1699
760	1649	1849
1.2G	2649	2849

Conner

Low power internals (only) for LC, Classic and Si

40	$249
120	469

WREN

300MB

$1199

MB	INTL	EXTL
173	$899	$999
300	1199	1349
300	1349	1499
330	1399	1549
425	1599	1699
600	1599	1749
630	1749	1899
630	1999	2149
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Quality Economy Toll-free support 1- & 2-year warranties

30-day performance guarantee 30-day money back guarantee

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88MB

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SQ-555	45 mb removable	$479
SQ-555	Dual 45 mb removable	899
SQ-5110	88 mb removable	899
SQ-5110	Dual 88 mb	1699

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For a limited time, includes "Nautilus"" CD ROM

Toshiba 579

Tape

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TEAC 600	999
WangDAT	1499
WangDAT	1999
ARDAT	1499

• **30 Day Money Back Guarantee** • All Drive products carry a 30 day Money-back guarantee. Your risk in the transaction is the cost of shipping.

• **Disk for Disk Replacement Warranty** • Quantum, Maxtor, Syquest and ARDAT Drives carry a two year "parts & labor" disk-for-disk replacement warranty. WREN, Teac, WangDAT, Conner drives and Syquest Cartridges carry a one year "parts & labor" disk-for-disk replacement warranty.

• **Brackets and Cables Included** • All Hard Drives include all brackets, cables, cords and LED's required for operation in the specified Macintosh. All Hard Drives come pre-formatted with Apple's latest stable System software, 18.8 MB of Publicly Distributable software from the B'MUG Library, and the "ALLIANCE POWER TOOLS" SCSI formatter/hard partitioner.

• **30 Day Performance Guarantee** • If your drive fails to perform properly in the first 30 days and our technical support staff can't solve the problem over the phone, we'll ship you a replacement drive overnight and have your defective drive picked up at our expense. Offer is subject to some limitations. Products being returned for credit and international orders do not apply.

• **Toll-Free Technical Support** • Toll Free Technical Support, 9:30am to 7pm Monday thru Friday, Central Time. As often or for as long as you need.

• Prices and Specifications subject to change without notice.

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Internal drives include:
- mounting brackets . SCSI cable
- ONTRACK formatting/partitioning software

Quantum

	Internal	External
40PRO 12ms	$229	$289
52LPS 9ms	$249	$299
105PRO 12ms	$339	$389
105LPS 9ms	$359	$409
210PRO 10ms	$679	$749

Maxtor

	Internal	External
40Mb 17ms	$229	$279
80Mb 17ms	$269	$339
210Mb 15ms	$639	$689
340Mb 14ms	$1079	$1129
660Mb 14ms	$1699	
1 Gig 14ms	$2299	

MICROPOLIS

	External
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660Mb 16ms	$1749
1 Gig 14ms	$2399

Seagate

	Internal	External
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80Mb 20ms		$315
337Mb 11ms		$1279
676Mb 15ms		$1579
1 Gig 12.9ms		$2199

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Microlaser XLPS17 17ppm, 1.5Mb RAM, 35 fonts, Postscript Appletalk Interface	$2599
Microlaser XLPS35 17ppm, 1.5Mb RAM, 35 fonts, Postscript Appletalk Interface	$2849

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DI 7.30.91

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Magic 24/96 Send & Receive Fax Modem
2 year warranty • 9600 baud fax modem!

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Magic 9600 Turbo- V.32 Turbo, V.32, V.42, V.42 bis, MNP-5 error correction, transmit and receive up to 38.4k baud!

MacUser ★★★★½
"excellent performance"

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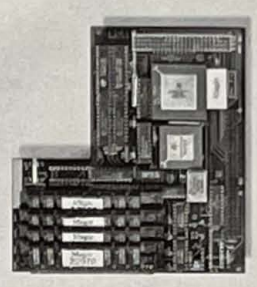
transmit up to 9,600 baud.....$179
Magic 2400 Baud Modem $69

Magic RailGun 030

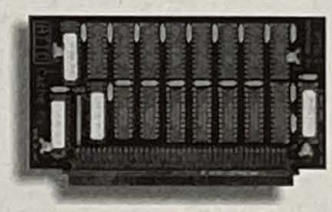


$449

16 MHz RailGun 030 Accelerator for the Macintosh Plus, SE, and Classic. MacUser says "IIci computing power in a Plus"

25 MHz RailGun 030 .....$699
33 MHz RailGun 030 .....$999
16 MHz 68882 Math CoProcessor $149

Magic IIci Cache Card



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$299

Magic IIci Cache card from MacProducts USA
64k Cache enhances your IIci performance.

Magic IIsi Cache Card enhances the
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2 MB SIMMs.....$99
4 MB SIMMs.....$159
4 MB IIfx SIMMs.....$159
Macintosh LC VRAM.....$79

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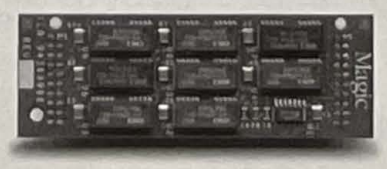

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TI 1MB RAM Upgrade for PS/17 & PS/35

TI 2MB / 3MB Upgrade .....$169/$239
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New Board Members

*** NEW ITEM! ***

LC FPU—$119

Improve the operational speed of your LC with our new 16 MHz math coprocessor. It's an inexpensive way to increase your productivity.

Radius Rocket $2549

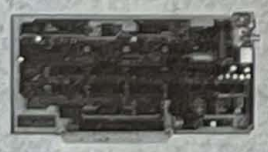
68040 accelerator installs into the NuBus slot.

DayStar PowerCache

40MHz-$1110

50MHz-$1895

Don't be fooled by low prices. Our price includes the 882 math coprocessor; others may not.



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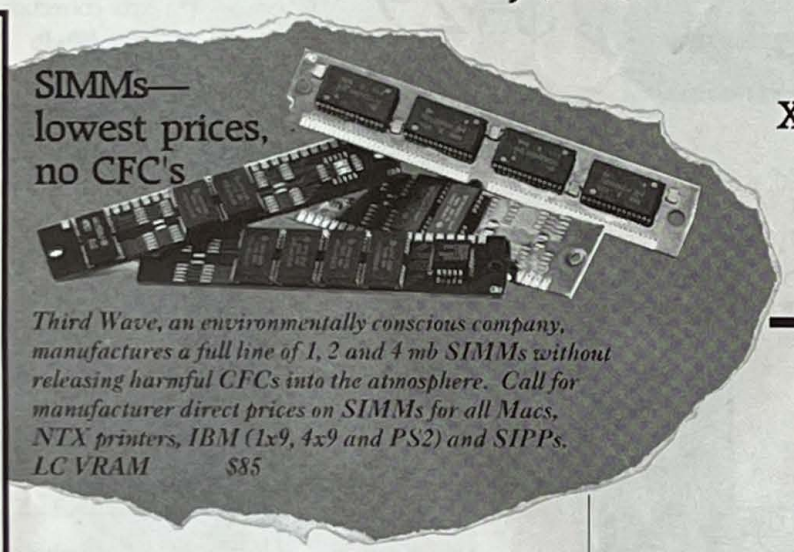
24-bit frame grabber. Great for still video.

64K IIci Cache Card $159

Improve your Mac IIci performance.

IIsi 030 Slot Adapter $75

With 20 MHz FPU—$139



SIMMs—lowest prices, no CFC's

Third Wave, an environmentally conscious company, manufactures a full line of 1, 2 and 4 mb SIMMs without releasing harmful CFCs into the atmosphere. Call for manufacturer direct prices on SIMMs for all Macs, NTX printers, IBM (1x9, 4x9 and PS2) and SIPPs.
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SyQuest, Tape, DAT, Optical

45SR SyQuest, one cart	$475
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88SR SyQuest, one cart	1149
88DR Dual SyQuest, two carts	2249
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OptiDisk™ 600 Sony Optical Drive	3250
OptiDisk™ 1000 Tahiti Optical Drive	3800

Internal & External Disk Drives

5 YEAR FACTORY WARRANTY ON MICROPOLIS

		Internal	External
40 *Special offer*	(Quantum)	$199	$289
40L*	(Maxtor 3.5)	270	350
52L*	(Quantum 3.5)	280	370
80L*	(Maxtor 3.5)	300	390
105L*	(Quantum 3.5)	440	530
120	(Quantum 3.5)	640	730
170	(Quantum 3.5)	680	770
210	(Quantum 3.5)	750	840
300	(Seagate FH)	1250	1350
320	(Micropolis HH)	1290	1380
330 Runner	(Seagate FH)	1450	1550
330	(Seagate 3.5)	1640	1730
415	(Seagate 3.5)	1790	1880
425	(Seagate HH)	1550	1640
425	(Quantum 3.5)	1810	1900
600	(Seagate FH)	1590	1690
645 Runner-2	(Seagate FH)	2090	2190
650	(Seagate FH)	1740	1840
650	(Micropolis FH)	1690	1790
1000	(Seagate FH)	2550	2650
1000	(Micropolis FH)	2390	2490
1350	(Seagate FH)	3450	3550

3.5=3 1/2" half height • FH=5 1/4" full height • HH=5 1/4" half height.
**Low power internal drives that meet Classic, IIsi & LC power specs.*
All drives pictured are in premium enclosures.

SIMMpack for the Classic

SIMMpack, the new Classic upgrade board from Logica makes use of your old 256k SIMMs in 1mb Classics. Save at least $50 and as much as $250 on every Classic by allowing the re-use of 256K SIMMs.
Available in four configurations:

Board only (0 mb)	$39	Board w/3mb	129
Board w/1mb	49	SIMMPack drive bracket kit*	16

*Remove drive from IIsi and LC, install in Classic.

Mindsurfing for the Mac

Ride the (Third) Wave. This attractive 100% white cotton shirt is silkscreened in three colors (red, aqua and black).
Large or Extra Large. $12.

Macworld finds our drives quietest.

"The quietest of the 64 drives tested...fast—three of the twelve fastest tested were Third Wave's"...and finally, "a good bargain."
-Macworld, *March 1991*
Premium enclosures with universal power supply available.

Combo Drives

105/45R	$1020
170/150t	1410
170/DAT	2400
210/DAT	2500
425/45R	2040
425/DAT	3340

OptiDisk™ 600 —the least expensive way to store your data. Over 30 combination drives available. Call for more information.

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Teac CT600H (60mb)	$17
Teac CT600N (150mb)	24
SyQuest SQ400	70
4mm DAT Tape, 60 meter	19
Optical Cart (ISO) 512 / 1024	149
2" video diskette for XAPSHOT	10

45R using Syquest cartridges, available as single, combo or dual removables.

45 Removable $475

Radius Products

Radius Rocket	$2549
Direct Color/GX NTSC	590
Radius Color Pivot	1490
Color Pivot Interface	590
Radius 19" 24 bit Color System	**4750**
Radius Accelerators	Call

RasterOps

364 Frame Grabber	685
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8L-24L Systems	Call

SuperMac Video Systems	Call
Seiko Trinitron 14"	589
Seiko ColorPoint Printers	Call
Ikegami Trinitron 19"	2100
64K IIci Cache Card	**159**
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TI MicroLaser PS35	1695
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Macintosh IIsi 3/40	$2575.00
Macintosh IIsi 5/120	$3225.00
Macintosh IIci 5/0	$3499.00
Macintosh IIci 5/105	$3975.00
Macintosh IIfx 4/0	$4879.00
Macintosh IIfx 8/210	$5869.00
Macintosh SE/30 2/40	$2299.00
Macintosh IIsi NuBus Adapter Card	$199.00
Macintosh IIsi 030 Direct Slot Card	$199.00
Apple IIe Card for Macintosh LC	$149.00
PSI Crunch-It! math chip for Mac LC	$129.00
Apple Extended Keyboard	$160.00
Apple Standard Keyboard	$90.00
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Mac IIsi Office Package — $4999
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Mac IIci Designer Package — $7599
8 Mb of RAM, 170 Mb internal hard disk, Mouse, Apple extended keyboard, Radius Color Pivot with built-in video, and Apple Personal LaserWriter NT.

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If you need it in print, the collection of printers we have to offer can't be beat in perfomance or price!

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GCC PLP II & IIS	Call

TrueType

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First TrueType and Postscript compatible printer

PostScript

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Apple LaserWriter II NTX	$3399.00
Epson EPL-7500 with RISC processor	$1949.00
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Quantum and Connor drives are the best on the market. They are fast and reliable. All ETC internal drives come with brackets, cables and software.

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ETC 120 Mb Connor-1", 19 msec	$455.00
ETC 120 Mb Quantum PRO, 11 msec	$579.00
ETC 170 Mb Quantum PRO, 11 msec	$640.00
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ETC 613 Mb WREN-5, 16.5 msec	$1499.00
ETC 676 Mb WREN-6, 15.5 msec	$1549.00
ETC 1.05 Gig WREN-7, 15msec	$2299.00

External

ETC 307 Mb WREN-4, 16.5 msec	$1299.00
ETC 337 Mb WREN-Runner-1, 10.7 ms	$1399.00
ETC 613 Mb WREN-5, 16.5 msec	$1499.00
ETC 676 Mb WREN-6, 15.5 msec	$1599.00
ETC 1.05 Gig WREN-7, 15msec	$2399.00

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New low price includes one cartridge

ETC 88R Syquest Removable — $799
Now Shipping! Includes one cartridge

ETC 1.2 Gb DAT Tape Backup	$1499.00
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45 Mb Syquest Removable Cartridge	$64.00
88 Mb Syquest Removable Cartridge	$140.00
60M DAT Tape for ETC DAT 1.2	$23.00
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If you need networking solutions today, we can provide you with everything from BNC connectors, cables, and terminators to LocalTalk routers, EtherNet interface cards and Repeaters. Call us and we'll help you build you network at a price you can afford.

Phone network adapters	$19.00
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NEW! Asanté MacCon+ 30iE/Radius	Call
Asanté MacCon+ LC E&T	$249.00
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EtherNet Thick and Thin

Macintosh II EtherTalk NB Card	$499.00
Asanté MacCon+ IIE or 30iE	$249.00
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EtherNet Thick and 10BaseT

Asanté MacCon+ IIET or 30iET	$249.00
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We have a complete collection of Apple and Apple compatible video products. Call us with your video requirements, and we will help you choose a video system that is right for you and your system.

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Apple 13" RGB Monitor	$669.00
Apple 15" Portrait Monitor	$769.00
Apple Two Page Monitor	$1199.00
Seiko 14" Trinitron RGB	$619.00
Macintosh Display Card 4•8	$439.00
Macintosh Display Card 8•24	$545.00
Macintosh Display Card 8•24 GC	$1349.00
512K VRAM Upgrade for Mac LC	$99.00

High-end Video and More...

If you need to see more than 640x480, here are some of the most innovative video solutions around.

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Mac II Systems

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RasterOps 8L Trinitron System	$3999.00
RasterOps 24L Hitachi System	$4579.00
RasterOps 24L Trinitron System	$5269.00
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RasterOps 8LC 19" Hitachi System	$3314.00
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RasterOps 264/SE30 Display Board	$579.00
RasterOps 8L Display Board	$1279.00
RasterOps 8LC Display Board	$579.00

Multimedia Boards

NEW! RasterOps 24XLTV Board	$3199.00
RasterOps 24STV Board	$1169.00
24STV Acceleration Board	$198.00
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Radius

Pivot Displays

Color Pivot Display IIsi and IIci	$1369.00
Color Pivot 8-bit System	$1899.00
for SE/30, LC, II, IIsi	
Pivot Display for IIsi and IIci	$779.00
Pivot 8-bit System	$975.00
for SE/30, LC, II, IIsi	

Full Page Displays

Full Page Display for Classic	$899.00
Full Page Display for LC	$909.00
Full Page Display for IIsi and IIci	$629.00
gets 16 shades of gray w/ built-in video	

Direct Color Systems

DirectColor/8 with Color Display/19	$4085.00
DirectColor/8 with Color Display/21	$4215.00
DirectColor/24 with Color Display/19	$5135.00
DirectColor/24 with Color Display/21	$5265.00

Accelerators

Radius Rocket	$2349.00

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Adobe Photoshop	$599.00
Aldus PageMaker 4.0	$499.00
Aldus Freehand 3.0	$399.00
Claris MacDraw Pro	$285.00
Claris MacWrite II	$139.00
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Claris HyperCard 2.0 Development Kit	$145.00
DoveFax Plus Modem	$349.00
Kensington Turbo Mouse ADB	$119.00
Microsoft Word 4.0	$245.00
Microsoft Excel 3.0	$309.00
Prometheus ProModem 9600MPlus	$599.00
Quark Xpress 3.0	$519.00

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The ETC DataPort $249.00
The latest in removable media. Convert your existing hard disk into a removable drive!!!

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Scanners helped revolutionize the way graphics and text get to the desktop. Here are some of the best.

Caere Typist Hand Held OCR	$479.00
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includes interface and software	
Logitech ScanMan-32 Hand Scanner	$319.00
Microtek 600ZS Color Scanner	$1499.00
Includes Adobe Photoshop	

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As the fastest-growing direct reseller of Macintosh systems, peripherals and software, Mac and More can now double the warranty on your Mac system with membership in Club 24. Services include:

- 24 month warranty on Apple products
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- Shipping via FedEx included both ways

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CONNER 200mb

Internal Drive
15 ms Access Time

$649

Maxtor® 345mb

Internal Drive
14 ms Access Time

$1149

CD-Rom Drives for the Macintosh

CM680	ClubMac		350ms	$459
CM680IL	ClubMac	(Illustrated Encyclopedia)	350ms	$499
XM3201	Toshiba		350ms	$599
CDR-73	NEC	(Encyclopedia, U.S. History, World Atlas and **FREE** headsets)	300ms!!	$649

ClubMac and Toshiba CD-Rom Drives have a ONE Year Warranty. NEC CD-Rom Drives have a TWO Year Warranty!!
All CD-Rom include one disk cartridge and all necessary cables.

Quantum

Model	Capacity	Access	Internal	External
* LPS	50mb	9ms	$249	$299
LPS	80mb	9ms	$379	$429
* LPS	105mb	9ms	$399	$449
PRO	120mb	10ms	$589	$639
PRO	170mb	10ms	$629	$679
PRO	210mb	10ms	$699	$749

Quantum Drives have a TWO Year Warranty!
Pro Drives are 3.5" half height drives. LPS Drives are 3.5" third height drives.
Low Power, 25 ms drives for the Mac Classic and LC AVAILABLE.

Maxtor®

Model	Capacity	Access	Internal	External
7080S	*80mb	19ms	$299	$349
LXT213	*207mb	15ms	$649	$699
8380S	†345mb	14ms	$1149	$1249
8760S	†645mb	16ms	$1579	$1679
"Panther"	†1.2GIG	13ms	$2229	$2329

Maxtor drives have a TWO Year Warranty.
* 3.5" half height drives. † 5.25" full height drives.

Imprimis Wren by Seagate

Model		Capacity	Access	Internal	External
425M	3.5"	400mb	16ms	$1495	$1545
383M		*300mb	14ms	$1179	$1279
385M	*Runner*	337mb	11ms	$1329	$1429
766M		676mb	15ms	$1479	$1579
767M		676mb	12ms	$1889	$1989
1200M	*Runner 2*	1.0GIG	15ms	$2229	$2329

Seagate Drives have a ONE Year Warranty. Most drives are 5.25" full height drives.
Internal drives fit Mac II, IIx, IIfx. * 5.25" half height drives.

Extended FIVE Year Warranty AVAILABLE!

CONNER

Model	Capacity	Access	Internal	External
3040	40mb	25ms	$235	$285
30100	120mb	19ms	$429	$479
3200	200mb	15ms	$649	$699

Conner Drives have a ONE Year Warranty.
Conner 40 & 120 are Low Power third height drives. The perfect match for the Classic, IIsi, & LC.

SyQuest TECHNOLOGY

Ask about Retrospect Bundle

44 mb $449
Extra Cartridges $69

88 mb $949
Extra Cartridges $149

Dual SyQuest 44 mb $829

SyQuest Drives have a **TWO Year Warranty!**
Includes one cartridge, all cables and formatting software.

HEWLETT PACKARD

5 Year Warranty

Model	Capacity	Access	Internal	External
*22355	425mb	14ms	$1449	$1499
97544	330mb	14ms	$1179	$1279
†97548	635mb	17ms	$1629	$1729
†97549	1.0GIG	17ms	$2289	$2389
†97560	1.4GIG	17ms	$3059	$3159

Hewlett Packard Drives have a FIVE Year Warranty!
Most drives are 5.25" full height drives. * 3.5" half height drives.
† High performance, 13.5 ms drives available, ASK FOR DETAILS!!

Tape Backup Systems

Teac	155mb	$529
WangtekDat	2.0GIG	$1489
WangDat	3.0GIG	$2279
ARDat	2.0GIG	$1399
Exabyte	2.2GIG	$2279

COMES with RETROSPECT Version 1.3 Software

All Tape Backup Systems include a **ONE Year Warranty**, one cassette, all necessary cables, and RETROSPECT (V. 1.3) Software!

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RasterOps *"We're Changing The Way People Look At Computers"*

RasterOps 21" Hitachi Color Systems

with 24XLi (24-bit, accelerated)	$5799
with 8XLi (8-bit, accelerated)	$3969
with 8XL (8-bit)	$2999

RasterOps 21" Monochrome Systems

with ClearVue/GSXL (1-bit gray scale)	$1669
with ClearVue/XL (1-bit monochrome)	$1489
with ClearVue/Classic (1-bit monochrome)	$1489

RasterOps Video Boards

24XLTV (19" Video/Display Adapter)	$3229
24STV (13" Video/Display Adapter)	$1159
364 (13" Video/Display Adapter)	$679
24Si (Accelerated 24-bit Video Board)	$579
24S (24-bit Video Board)	$389
264/SE30 (24-bit Color for SE/30)	$579
Correct Color Calibrator	$1939

True Color 21" system for the professional who needs 32-bit QuickDraw compatibility. True Color Displays for Mac II and SE/30 users. Multi Media video options for your video needs. 8-bit color systems. It's your choice.

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The 19" and 21" Radius Two Page Display provides a sharp, flicker-free image for desktop publishing specialists.

The Radius Full Page display for the Macintosh Classic is a professional quality display system designed for desktop publishing.

Radius Color Display Systems/21

• 21" color display for the Macintosh II family, displays two facing pages in a resolution of 1152 X 882 X 71 Hz at 78 dpi

with DirectColor/24 Interface	$5179
with DirectColor/8 Interface	$4129
with DirectColor/GX Interface NTSC	$3479
with GS/C Interface	$3599

Radius Color Pivot Display Systems

• 15" dual orientation, anti-glare, color full page display in a resolution of 640 X 870 X 75 Hz at 82 dpi

with Color Pivot-IIsi Interface	
with Color Pivot-II Interface (NuBus)	YOUR CHOICE
with Color Pivot-LC Interface	$1839
with Color Pivot-SE/30 Interface	

Radius Two Page Display Systems/21

• 21" monochrome, landscape, two page display for the Macintosh in a resolution of 1152 X 882 X 71 Hz at 74 dpi

with TPD-II Interface	$1569
with TPD-IIsi Interface	$1569
with GS/C Interface	$1839
with TPD-SE/30 Interface	$1569
with TPD-SE Interface	$1569

Radius Full Page Displays

• 15" monochrome portrait display

with FPD-Classic Interface	YOUR CHOICE
with FPD-SE Interface	$789

Radius Pivot Display Systems

• 15" monochrome, dual-orientation, full page display for the Macintosh in a resolution of 640 X 870 X75 Hz at 78 dpi

with Pivot-LC Interface	
with Pivot-SE/30 Interface	YOUR CHOICE
with Pivot-II Interface (NuBus)	$979

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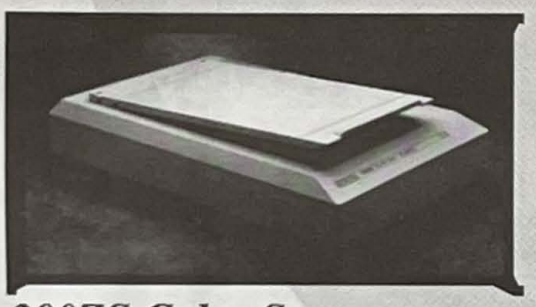
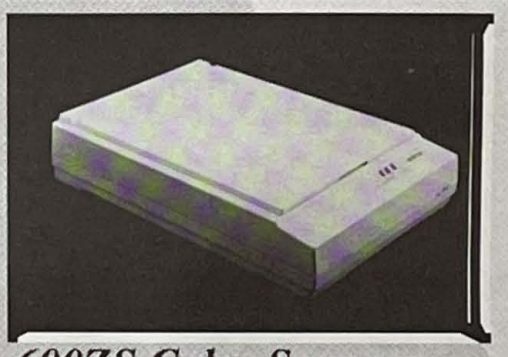


FREE Adobe Photoshop

300ZS Color Scanner

- 300 X 300 dpi maximum resolution
- Capable of scanning 16.8 million colors
- Built in SCSI Interface for Macintosh only
- Optional OCR software
- **Includes Adobe Photoshop**

$1069



FREE Adobe Photoshop

$1479

600ZS Color Scanner

- Up to 600 dpi high resolution scanning
- Capable of scanning 16.8 million colors, 256 shades of gray and B/W
- **FULL** version of award winning Adobe Photoshop, provides advanced 24-bit color editing and color separation capabilities
- Built in SCSI Interface for Macintosh
- OCR Compatible

1 Year Warranty

NEC

Buy any of the following NEC products and get a **FREE 90 Day On-Site Service**

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SilentWriter2 Model 90

- 6 ppm •16 MHz • Minolta Engine
- 250-Sheet Universal Paper Tray

SilentWriter2 Model 990

- 8 ppm • Canon Engine • 32 MHz RISC Processor
- Built in SCSI Port • Auto-Emulation Switching

Standard Features Model 90 and Model 990		
	• TRUE Adobe PostScript	• 35 scalable fonts
	• 300 dpi high resolution	• 2 MB RAM expandable to 4 MB
	• Includes AppleTalk Interface	

$4499

ColorMate PS Model 40

- Adobe PostScript interpreter
- 300 X 300 dpi high resolution
- 1 ppm, color / 3 ppm, monochrome
- 4 MB RAM, 16.7 MHz, 17 scalable fonts
- AppleTalk Interface, Built in SCSI Port

TEXAS INSTRUMENTS

microLaser PS 17

- 6 ppm • 17 Fonts • 1.5 MB RAM
- Adobe PostScript
- Sharp 9500 Engine

$1299

microLaser PS 35

- 6 ppm • 35 Fonts • 1.5 MB RAM
- Adobe PostScript
- Sharp 9500 Engine

$1599

microLaser PS 17 XL

- 17 ppm • 17 Fonts
- 1.5 MB RAM
- Adobe PostScript

$2525

microLaser PS 35 XL

- 17 ppm • 35 Fonts
- 1.5 MB RAM
- Adobe PostScript

$2825

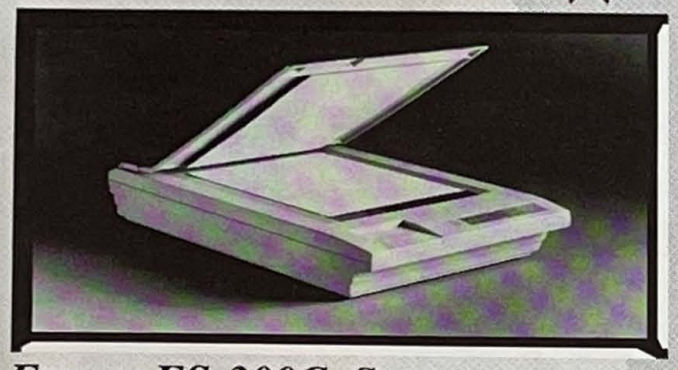
EPSON® 2 Year Warranty

Epson EPL-7500 Laser Printer

$1995

- **TRUE** Adobe PostScript
- High-speed RISC processor
- Parallel, serial and AppleTalk interfaces standard
- HP LaserJet Series II Emulation
- 6 ppm print speed • 35 resident fonts
- 2 MB RAM standard, expandable up to 6 MB
- MicroArt Printing with 300 X 300 dpi resolution
- High-capacity, 250 sheet paper tray standard

EPSON® One Year Warranty



Epson ES-300C Scanner

$1449

- Up to 600 dpi resolution
- Macintosh/MS-DOS PC compatible
- Ideal for capturing scrap art, developing presentations, retouching and OCR.
- 24-bit color scanning that produces 16 million different colors and 8-bit monochrome scanning that produces 256 shades of gray
- Epson's TruePass scanning system uses 3 separate light bars for advanced one-pass scanning
- **Includes ColorStudio, ImageStudio and ScanDo/DA !!**

Acceleration and Memory Products . . .

DAYSTAR DIGITAL — 30 Day Money Back Guarantee

Mac IIci

FastCache IIci	$259
40 MHz Power Cache	$895
40 MHz Power Cache w/ 68882	$1095
50 MHz Power Cache	$1589
50 MHz Power Cache w/ 68882	$1856

Mac II, IIx, IIcx* **Mac IIcx upgrade REQUIRES motherboard modification with additional charge*

25 MHz Power Card 030	$1035
25 MHz Power Card 030 w/ 68882	$1175
33 MHz Power Card 030	$1175
33 MHz Power Card 030 w/ 68882	$1379
40 MHz Power Card 030	$1309
40 MHz Power Card 030 w/ 68882	$1519
50 MHz Power Card 030	$1795
50 MHz Power Card 030 w/ 68882	$2069

For Your IIsi

• 030 Adapter Card w/FPU and Cache Module Socket	$139
• CACHE-IT! 64K Cache Simm	$315
• CACHE-IT! Bundle	$345

For Your Mac LC

• MultiColor (8/16 Bit Video Simm)	$99
• CRUNCH-IT! 68882 CoProcessor	$119
• MultiColor/CRUNCH-IT! Bundle	$189

MICRON TECHNOLOGY, INC.

1mb X 8 - 80ns Simms	$39
1mb X 8 - 80ns FX Simms	$44
1mb Mac Classic Card	$55
4mb X 8 - 80ns Simms	$179
Mac IIci Cache Card 128K	$229
JPEG Image Board	$459
SE/30 8-bit Color Card	$289
Mac II 8-bit Color Card	$289

QLS Quantum Leap Systems

Math CoProcessors for LC & IIsi

• 16 MHz with 68881	$89
• 16 MHz with 68882	$129

Tokamac Accelerators

• 68040 for LC	$2249
• 68040 for SE/30 & IIsi	$2419
• 68040 for IIci	$2579

radius

Radius Rocket for NuBus	$2295
25 MHz for SE	$849
25 MHz for SE with 68881	$915

Software and Miscellaneous Products . . .

Aldus PageMaker 4.0	$515
Aldus Persuasion 2.0	$319
Adobe Illustrator 3.0	$379
Adobe Photoshop 2.0	$569
Adobe Type Align	$65
Adobe Type Manager 2.0	$65
Adobe Type Reunion	$45
Carbon Copy Mac 2.0 (single user)	$59
Carbon Copy Mac 2.0 (multi-user)	$175
FGS FastBack II 2.5	$115
Freehand 3.0	$385
HyperCard 2.1	$139
Retrospect (single user)	$145
Retrospect (10 user Network)	$145
Retrospect Remote w/10 user Pak	$259
Microsoft Excel 3.0	$325
Microsoft Word 4.0d	$259
Norton Utilities	$85
QuarkXPress 3.0	$515
SUM II (Symantec Utilities)	$99
WordPerfect (Mac Version 2.0.1)	$279

Mice

• Kensington Turbo Mouse	$110
• Abaton Propoint Trackball	$75
• Mouse Systems Littlemouse	$69
• EMAC Silhouette Trackball	$85

Faxes and Modems (includes cables)

• Abaton 2400/9600 Interfax	$299
• DoveFax 2400/9600 Fax Modem	$295
• EMAC 2400 Modem w/MNP 5	$155
• 3C 2400/9600 Fax Modem	$189
• 3C 2400 Modem (Cables &Software)	$97

Hard Drive Accessories

• 25-50 SCSI Cable	$10
• 50-50 SCSI Cable	$10
• External Terminator	$10

Tape Backup Cassettes

• Teac CT600N	150mb	$25
• 60M DAT	1.3GIG	$20
• 90M DAT	2.0GIG	$30
• 8mm Exabyte 120 min	2.2GIG	$30

Miscellaneous Products

• Keytronic MacPro Plus Keyboard	$120
• 600mb Optical Cartridges (512)	$119
• Mac Cracker Toolkit	$19
• ATTO 64K Cache Card	$189

Phonenet Compatible Connectors $14

General Information . . .
- Visa and Mastercard accepted. No surcharge. Credit card orders are billed at time of shipment.
- Prices good for stock on hand. All prices subject to change without notice.
- University POs accepted with NET 30 terms. Corporate POs accepted upon APPROVAL.
- All shipments are FOB origin. Prices do not include freight. COD orders accepted, limit $1500.

Warranties . . .
- All items manufactured by ClubMac are returned to ClubMac for warranty repair.
- All other items are returned to their appropriate manufacturer.

Money Back Guarantee . . .
- All items manufactured by ClubMac carry a 30 day money back guarantee.
- ClubMac provides 30 day money back guarantee on all other products if manufacturer offers guarantee.
- Laser Printers, Scanners, Software, Monitors, and special order items do not carry a money back guarantee.
- All implied guarantees do not apply to price reductions. Some limitations apply.

Returns . . .
- Any product that is returned WITHOUT a RMA number will be refused and sent back to customer at customer's expense. Call for RMA number. Proof of purchase is REQUIRED.

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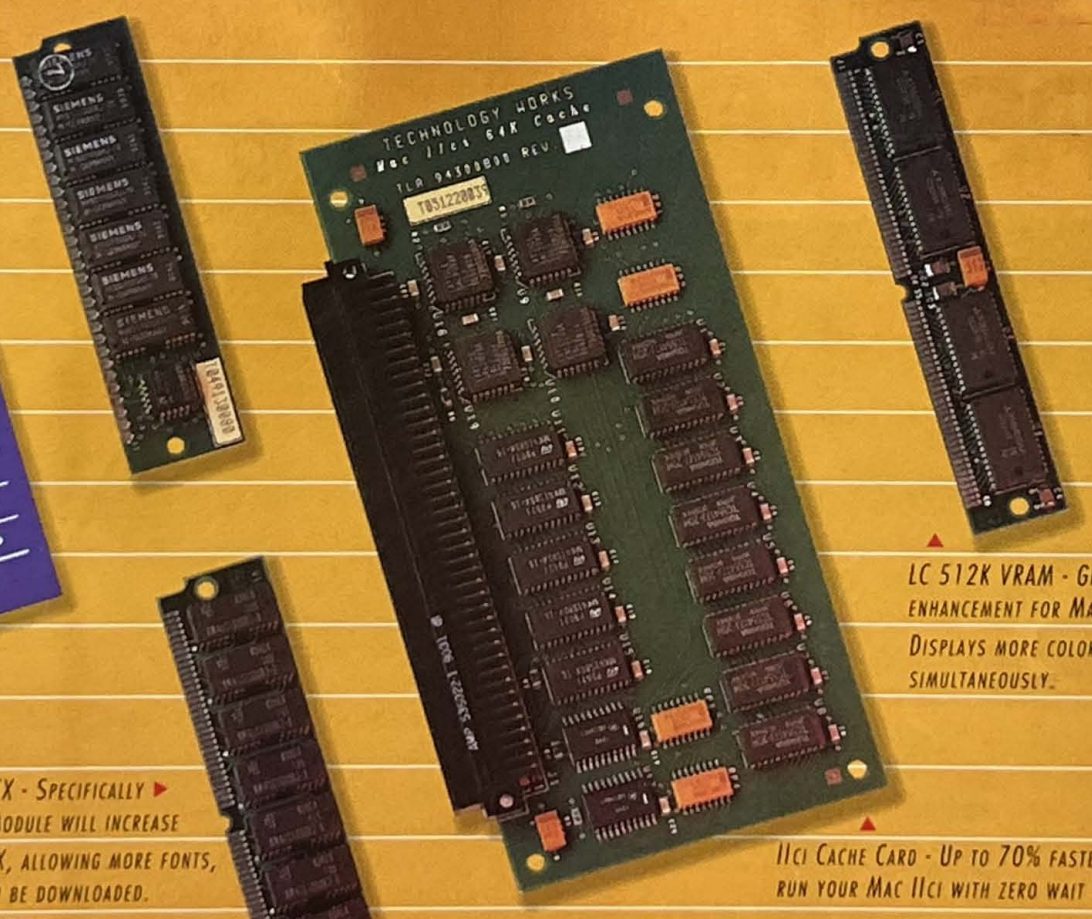
TechWorks™ memory products are the world's best. Each is designed, engineered, and built by bizarre, monomaniacal perfectionists in a controlled environment at our own facility. And we're one of the few major companies building the more reliable surface mount design. Because of this, we can warranty each part for life, price them far below comparable products, and offer toll-free access to our technoids for knowledgeable technical support or science fiction trivia. So call toll-free for today's prices and take your Mac® to the max for System 7.0. Lifetime warranty, 30-day money-back guarantee, free installation kit, and toll-free support service are included. Corporate PO's accepted, all major credit cards honored, plus overnight delivery and volume discounts are available. Facsimile orders: 512-794-8520. Technical Support: 800-933-6113. Business line: 512-794-8533.

Easily-installed surface mount memory modules available for all Macs (see chart below).

Model	SIMM Sizes Available			
	1 MB	2MB	3MB	4MB
Macintosh Plus	•			•
Macintosh SE	•			•
Macintosh SE/30	•			•
Macintosh II	•			•
Macintosh IIx	•	•		•
Macintosh IIcx	•	•	•	•
Macintosh IIci	•	•		•
Macintosh Classic	•	•		•
Macintosh LC	•	•		•
Macintosh IIsi	•	•		•
Macintosh IIfx	•			•
Macintosh Portable	•	•	•	•



July Special - 3MB Classic Module. Only $129 (regularly $169)

LC 512K VRAM - Graphic enhancement for Mac LC. Displays more colors simultaneously.

LaserWriter® IINTX - Specifically designed memory module will increase throughput on NTX, allowing more fonts, documents, etc. to be downloaded. Also available for TI® Printer.

IIci Cache Card - Up to 70% faster, run your Mac IIci with zero wait states.

LIFETIME WARRANTY

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Fujitsu Special!

- Fujitsu 330 Internal $1548
- Fujitsu 425 Internal $1648
- Fujitsu 525 Internal $1748
- 5 Year Warranty!
- 200,000 Hours MTBF
- 9ms access time!
- Incredibly Fast & Reliable!
- Perfect internal for all Macs!*

Fujitsu 3.5" Drives

	Internal	External
45 MB 3.5" Low Profile/Low Power3yr warr, 50,000MTBF	$238	$298
90 MB 3.5"3yr warr, 50,000 MTBF	$338	$398
135 MB 3.5"3yr warr, 50,000 MTBF	$418	$498
185 MB 3.5"3yr warr, 50,000 MTBF	$548	$598
330MB 3.5" 5 yr warr., 200,000 MTBf*, 9ms Access	$1548	$1598
425MB 3.5" 5 yr warr., 200,000 MTBf* 9ms Access	$1648	$1698
520MB 3.5" 5 yr warr., 200,000 MTBf* 9ms Access	$1748	$1798

*Mean Time Between Failure is the average life expectancy of a drive.(In case of a 200,000 MBTF, this means a potential of **24 years** of 40 hour weeks, 52 weeks per year!)

- All 3.5" Drives are available in zero footprint (including a 40watt power supply, and dual AC outlets), or micro cabinets as well as internal for all Mac's.
- All 5.25" Drives are available in zero footprint external (including a 65 watt power supply, cables, and ext. terminators) or asinternals for the Mac II, IIx, and IIfx.

Fujitsu 5.25" Drives

5 Year Warranty! 200,000 Hours MTBF!*

	Internal	External
357 MB 5.25" Full Hght 16ms	$1198	$1248
680 MB 5.25" Full Hght 16ms	$1598	$1698
1.2 Gig 5.25" Full Hght 14ms	$2498	$2598

*Mean Time Between Failure is the average life expectancy of a drive. 24 hour factory replacement available for 5.25"

Archive DAT Tape Backup

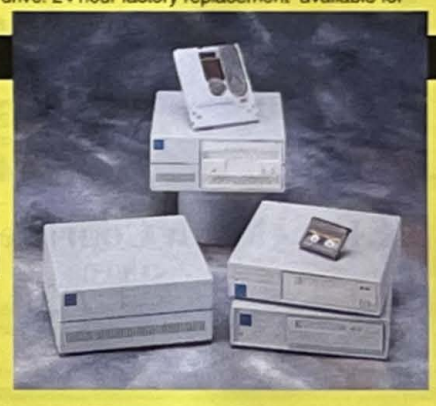
2.2 Gig Capability $1498

- Up to 10 mb per minute backup time
- Includes SoftBackup II for Fast network and unattended backup capabilities

SyQuest! 44MB & 88MB Removables

44MB REMOVABLE.....$448.00
88MB REMOVABLE..... $848.00

- 19ms Access time
- Both Drives include Cartridge
- Dual AC Outlets, 40Watt power supply
- SCSI Select and 2 Year Warranty



Ricoh Optical

600 MB Optical.....$2698

- Read/write reliable storage
- 66ms Access Time
- Great for archiving, color scans etc.

Fujitsu 1.2 Gig Drive

	Internal	External
1.2 Gig H/D	$2498	$2598

- 11.5 M.S. access time / 4.8 mbs transfer rate
- 200,000 hours mean time between failure
- 5 year warranty
- Incredibly fast! **MacWorlds Fastest 1.2Gig!**

JX-9500PS Sharp Printer 35 Fonts

JX-9500PS 35Fonts..... $1648.00

- 2.5 mb Ram Memory
- MacUser #1 printer 4.5 mice rating
- 35 Fonts, 6 page per minute
- Letter, legal and transperancies
- Includes Appletalk interface!
- Sharp is the manufacturer of the TI Microlaser, this is the same printer!

800 K Mac Floppy Drive $99

These Fujitsu External floppy drives have a one year warranty. Completely compatible.
These are brand new slimline drives and they look great!
These drives retail for $259!

Fujitsu 800k 99.00!

Quantum Drives/Wren Drives

	Internal	External
Q 52MB 3.5" LPS	$278	$348
Q 105MB 3.5"LPS	$448	$498
Q 120MB 3.5"	$598	$658
Q 170MB 3.5"	$688	$758
Q 210MB 3.5"	$778	$848
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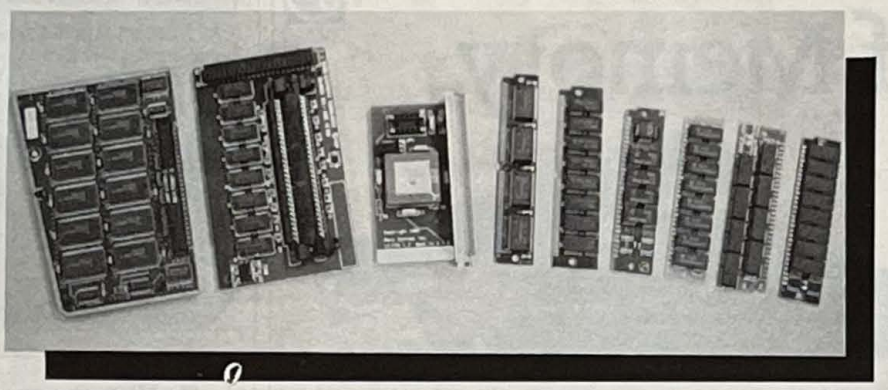

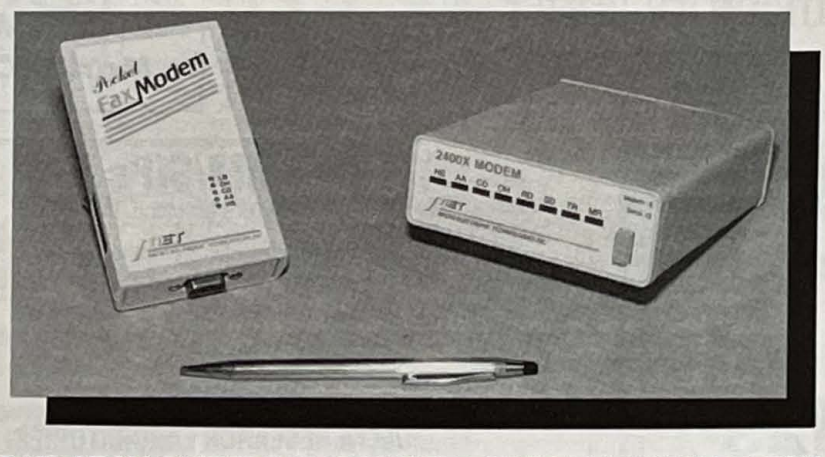

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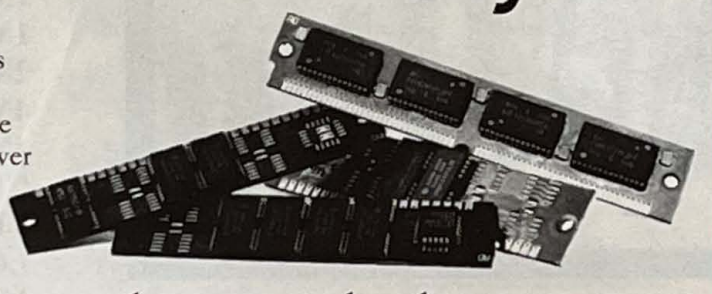

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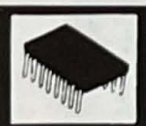

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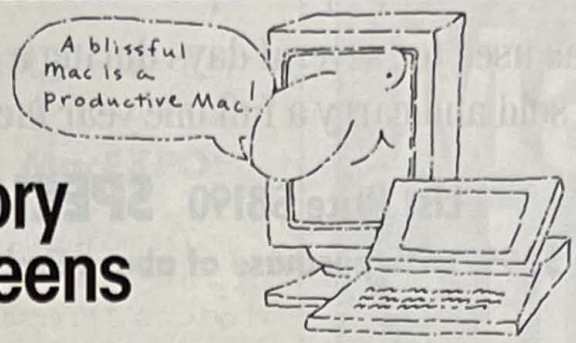

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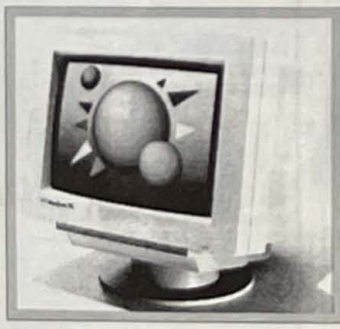

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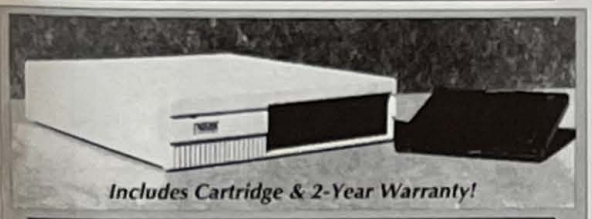

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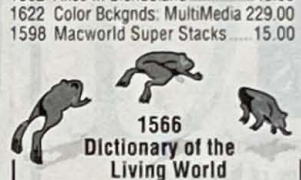

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BUSINESS WATCH

- Industry news
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Ehman woes may be cured in California

By Dartanyan L Brown

Evanston, Wyo. — Faced with mounting financial difficulties, Ehman Inc. is close to signing a deal that would turn over responsibility for assembling its low-cost peripherals to Questronics Inc., a San Clemente, Calif.-based contract manufacturer.

"We've discussed arrangements and agreed in principle on some issues," said Mike Ehman, president of Ehman, located here.

In recent months, the company has been the target of customer-service complaints and has shuffled key personnel (see MacWEEK, Jan. 15). According to sources, it also has had cash-flow problems that caused some suppliers to tighten credit terms on shipments to Ehman.

The resulting delay in deliveries has slowed down Ehman's service turnaround and product shipments.

That's where Questronics comes in. It will assemble and ship drives for Ehman, which also markets drives with the Cutting Edge label.

Under the agreement, drive mechanisms that come from SyQuest Technology, Seagate Technologies Inc. and Quantum Inc. will be sent directly to Questronics and assembled at its facility.

See Ehman, next page

CHUCK NACKE/PICTURE GROUP

MacroMind's Tim Mott (left) and Paracomp's Bill Woodward (right) will serve as CEO and chairman, respectively, of MacroMind/Paracomp, which is expected to dominate Mac multimedia.

'ParaMind' could boost multimedia

By Carolyn Said

San Francisco — Industry reaction was positive to the recently announced merger of MacroMind Inc. and Paracomp Inc., both based here (see MacWEEK, July 16). Synergy between the companies' products should make MacroMind/Paracomp — now the largest Mac multimedia company — a powerful force in multimedia and help improve both companies' profitability, observers said.

Although the companies insisted they came to the merger from a position of strength, analysts said that neither MacroMind nor Paracomp has been wildly successful. "I would imagine both companies had a very hard time being profitable," said Nick Arnett, president and chief analyst of Multimedia Computing Corp. of Santa Clara, Calif.

"The market, as is usually the case, has not lived up to the hype," admitted Tim Mott, MacroMind president and CEO. However, "growth has still been strong."

Earlier this month, MacroMind laid off about 10 percent of its staff, a move that it defended as practical. "Trimming the work force to fit the current business situation is seen frequently in companies," Mott said.

Analysts said the companies' bottom lines undoubtedly reflected the current state of the multimedia market. "Multimedia is not down and out, but it has reached a plateau of sales to niche markets," said Tony Bove, editor and publisher of Bove & Rhodes Inside Report on Desktop Publishing and Multimedia in Gualala, Calif.

By pooling resources, MacroMind/Paracomp may be able to stimulate more industry growth.

"The most important thing that needs to happen for the market to grow is education of the channel and customers," Arnett said. "The combined companies can afford more channel development and customer education without bleeding red ink."

Similarly, the new organization should be able to promote its own products more efficiently.

"To sell, support, distribute and manufacture the Paracomp and MacroMind lines requires almost identical resources and expenditures," said Angela Aber, marketing vice president for the Graphix Zone, a multimedia-oriented dealer in Irvine, Calif.

Overlap between the companies' product lines is not a problem, Bove said, since people who do multimedia tend to buy several multimedia programs, even if they have overlap-

See Merger, next page

Pen conference attracts crowd

By Andrew Gore

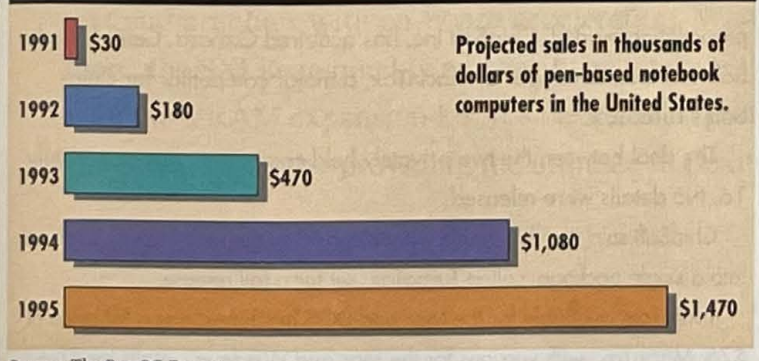
San Francisco — The Pen Computing 1991 conference sponsored by Technologic Partners of New York surprised its sponsors earlier this month by attracting more than 700 attendees.

"I really am surprised at the size of the turnout," said Richard Shaffer, principal at Technologic, which intends to hold this event annually. "There is enormous curiosity right now about pen computing. As to whether this [curiosity] will translate into sales remains to be seen."

NCR Corp. announced its first pen-based notebook computer earlier this month, although the unit won't ship before October. The only

See Pen, next page

Growth of pen-based computers


1991 $30
1992 $180
1993 $470
1994 $1,080
1995 $1,470
Projected sales in thousands of dollars of pen-based notebook computers in the United States.

Source: The Pen-PC Report

Apple posts $53M loss, unit sales growth slows

By Andrew Gore

Cupertino, Calif. — Apple posted its first quarterly loss in six years as a result of a $224 million write-off.

Revenue for the third quarter, which ended June 28, was $1.53 billion, up from the $1.37 billion posted for the same period last year. But while revenue was up slightly, the number of Macs shipped in the quarter climbed 60 percent from 1990's third-quarter ship rate. This figure is down from the 85 percent ship-rate growth the company experienced last quarter, indicating that unit-sales growth may be peaking.

"The unit growth in the Macintosh was down from 85 percent to 60 percent," said Charlie Wolf, vice president of research at First Boston Corp. in New York. "The industry is down much more than that, but it still took its toll on Apple results."

The big news for Apple's third quarter was the $53.1 million loss the company took as the result of a huge write-off for restructuring and litigation costs.

Apple set aside approximately $75 million for costs associated with a 1,500-employee layoff (see MacWEEK, June 4). The company already has handed out pink slips to about 1,000 employees in the last month, with the balance of the layoffs to be made by year-end.

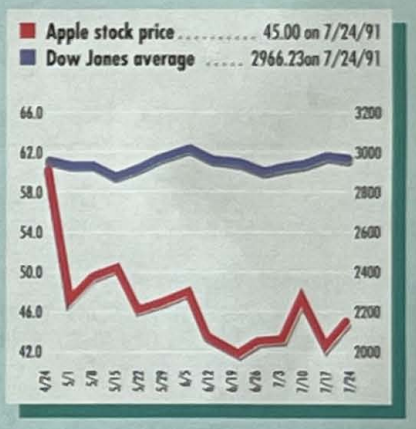
Another $115 million was set aside for relocating many of the company's corporate operations, now in Silicon Valley, to less expensive areas. The company's data processing center is being moved to Napa, Calif., and part of its financial operations also may be relocated. The company may move some of its development staff to Texas to be closer to new technology part-

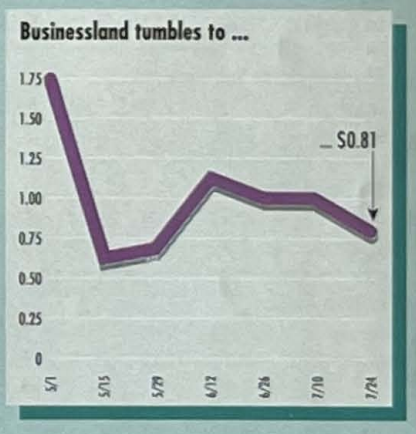
See Apple, next page

StockWatch

	07.24.91 CLOSE	% CHANGE FROM 7/10
Apple	45.00	-4.76
SOFTWARE DEVELOPERS		
Adobe	48.50	1.04
Aldus	37.00	-13.95
Ashton-Tate	15.88	0.00
Caere	16.63	-16.88
CE Software	6.00	26.32
Microsoft	65.50	0.38
Symantec	48.50	0.52
PERIPHERALS VENDORS		
CMS	2.38	5.56
HP	52.63	-3.88
Mass Micro	0.94	-16.62
QMS	20.00	1.91
Radius	5.50	-4.35
RasterOps	25.38	15.34
Sigma	10.25	-2.38
STORAGE		
Conner	19.88	5.30
Maxtor	2.50	-9.09
Quantum	10.38	-6.74
Seagate	9.13	5.80
INDUSTRY INDICATORS		
Businessland	0.81	-18.70
DEC	67.00	4.69
IBM	100.88	2.15
Motorola	62.50	-1.19
Sun	26.50	-7.83
Dow Jones	2966.23	0.73

Compiled by Nordby International Inc.





When JWP Inc.'s offer to acquire Businessland Inc. backfired with bondholders, JWP had to amend its offer. The new offer lowers the price JWP will pay from $1.30 per share to $1 per share so it can raise its offer for the reseller's bonds from $250 per $1,000 bond to $350 per $1,000 bond. The result? Businessland's stock fell 18.7 percent from July 10 to close July 24 at 81 cents per share.

Pen

From previous page

pen-based computer that customers can buy now is offered by GRiD Systems Corp. of Fremont, Calif.

Among the vendors expected to join the pen fray in the next year and a half are IBM Corp. and Apple.

The PenPoint operating system from Foster City, Calif.-based GO Corp. uses pens as its primary input device. PenPoint supports handwriting recognition and gesture interpretation; pen strokes can be used to activate commands.

Apple and Microsoft Corp. are expected to offer extensions to their operating systems that will take advantage of pens for input, handwriting and gesture recognition.

"In terms of units shipped, pen-based computing is not a market yet," said Vern Rayburn, CEO of Scottsdale, Ariz.-based Slate Corp., which develops pen-based applications. "In terms of development investment, I'd say pen computing is already as big as [IBM] PC computing. There's something like $5 billion currently invested."

Pen input could change how the Mac is used more than any other platform, analysts said.

"The Mac is still considered a graphics environment, and graphics will be the first application area that will take off for pen computing," said Portia Isaacson, president of Cambridge, Mass.-based Dream Machine Inc., publisher of Pen-PC Report. "All it's waiting for is some developer to make it sexy to Mac users." □

Apple

From previous page

ner IBM Corp.'s Austin operations, sources said.

Some or all of Apple's Fremont, Calif., manufacturing operation is rumored to be relocating to other Apple manufacturing facilities, sources said, including a new Apple plant in Colorado Springs, Colo.

In addition to restructuring costs, Apple also set aside $30 million in anticipation of a settlement in the trademark case brought in London on behalf of the Beatles' Apple record label. Restructuring and litigation costs associated with this write-off are expected to be disbursed over the next 12 to 18 months, according to the company.

Apple's margins for the third quarter slipped another three points from the second quarter to 45.8 percent.

Gross margins for the 1990 third quarter were 54 percent. Revenue from international sales rose two points from the same quarter last year to 44 percent of total Apple sales. □

MacWEEK index
PROFIT, SALES IN COMPUTER INDUSTRY

The following are revenues and margins for companies in the personal computer industry (in millions of dollars).

	1986	1987	1988	1989	1990	1991*	Avg. growth rate	Avg. margin
Apple								
Revenues	$1,902	$2,661	$4,071	$5,284	$5,589	$6,385	27.4%	—
Gross margin	53.2%	51.3%	51.1%	49.0%	53.4%	47.4%	—	50.4%
Compaq Computer Corp.								
Revenues	$625	$1,224	$2,066	$2,862	$3,599	$3,480	41.0%	—
Gross margin	42.3%	41.4%	40.3%	40.1%	42.8%	36.7%	—	40.2%
Conner Peripherals Inc.								
Revenues	—	$113	$257	$705	$1,338	$1,661	95.7%	—
Gross margin	—	25.8%	21.5%	21.1%	24.5%	22.8%	—	23.1%
Egghead Discount Software Inc.								
Revenues	$27	$78	$201	$342	$457	$518	81.1%	—
Gross margin	16.9%	19.5%	21.4%	18.3%	17.5%	17.5%	—	18.2%
Lotus Development Corp.								
Revenues	$283	$396	$469	$556	$685	$801	23.1%	—
Gross margin	77.9%	79.5%	77.2%	79.6%	79.3%	79.0%	—	78.9%
Microsoft Corp.								
Revenues	$198	$346	$591	$804	$1,183	$1,837	56.2%	—
Gross margin	79.3%	78.6%	75.0%	74.6%	78.6%	79.9%	—	78.0%
Quantum Corp.								
Revenues	$121	$121	$189	$208	$446	$878	48.6%	—
Gross margin	39.9%	34.4%	21.5%	28.8%	29.5%	24.6%	—	27.4%
Tandy Corp.								
Revenues	$3,036	$3,452	$3,794	$4,181	$4,500	$4,605	8.7%	—
Gross margin	51.5%	50.8%	50.7%	48.6%	47.1%	45.4%	—	48.7%

*Estimated

Source: Wolf Bytes, a First Boston Corp. computer-industry newsletter

Ehman

From previous page

"We're involved in a $4 million contract with Ehman, and considering that [it] can move thousands of drives a month, we'll be in pretty good shape if things continue as is," said Lynn Austin, Questronics vice president of sales and marketing.

Ehman's decision to move manufacturing to California apparently doesn't mean the end of operations in the state of Wyoming, which has previously provided several loans to finance the company's growth.

"Wyoming had been great for us until we reached a certain size," Ehman said. "As the market matures, margins are going down for everyone, and we have to be more operationally oriented to survive."

According to Austin, Ehman will retain a Wyoming-based sales, marketing and technical-support staff.

"We will be manufacturing all configurations of hard disk drives and DAT (digital audio tape) products for Ehman," Austin said. "Monitors have come up [for discussion], but nothing yet has been decided." All other Ehman operations will remain in Wyoming.

Ehman has experienced rapid growth since it was founded in 1985. But with that growth came customer complaints about a service organization that didn't grow as fast as sales.

To help improve operations, Ehman replaced himself as president with George Catalano in January. Less than six months later, Catalano resigned, and Ehman has returned as president. "George and I took a look at the company and realized that it needed another change in direction," Ehman said. □

Merger

From previous page

ping capabilities. The companies' flagship products, MacroMind Director and Paracomp's Swivel 3D, are already commonly used together, he added.

Other examples include Paracomp's FilmMaker, which has strong path-based animation, something Director lacks, while Director has simpler and more-complete tools for creating interactive multimedia. MacroMind's recently shipped 3-D animation and rendering package lacks modeling capabilities, which Swivel 3D can provide.

Paracomp's product lineup is currently all-Mac, while MacroMind recently shipped a developer version of Windows Player, a runtime environment that lets Microsoft Windows users play back Director movies. Further expansion into cross-platform products would be a natural direction for the new company to head, observers said.

"Paracomp has new products in the works for Windows," said Bill Woodward, Paracomp CEO.

Some analysts speculated that going public could be a next step for MacroMind/Paracomp. "There could be an IPO (initial public offering) out of this, but we're not rushing," Woodward said. □

Business BRIEFS

RasterOps earnings up 167 percent in 1991

Santa Clara, Calif. — RasterOps Corp., a leading Mac monitor and graphics card manufacturer, posted 1991 earnings of $6.4 million, or $1.11 per share, up 167 percent from the $2.4 million, or 57 cents per share, posted for the previous year.

Sales for RasterOps' 1991 fiscal year, which ended June 30, were $72.4 million, up 56 percent from 1990.

For the fourth quarter, net income rose 135 percent from last year's fourth quarter to $1.86 million, or 32 cents per share. Sales for the quarter were $20 million, up 50 percent from last year's fourth quarter.

RasterOps attributed its 1991 earnings growth to continued strong sales of its True Color products.

Farallon names new president

Emeryville, Calif. — Farallon Computing Inc., a major player in the Mac network market, has named Alan Lefkof as its new president. Reese Jones, founder of the company, will continue as Farallon's chairman and CEO.

Farallon's Alan Lefkof

Lefkof, 38, previously was president of Fremont, Calif.-based GRiD Systems Corp. Jones said Lefkof was chosen because of his role in pioneering portable computing at GRiD.

Lefkof will be in charge of daily business operations, leaving Jones free to work on long-term product and strategic planning.

Radius Q3 earnings up but revenue down

San Jose, Calif. — As RasterOps Corp. celebrated a banner year (see story above), competitor Radius Inc. announced that sales for its third quarter 1991 declined $1.1 million from the previous year.

Radius posted an income of $1.1 million, or 8 cents per share, on sales of $29.2 million for the third quarter 1991. In the same quarter of 1990, income was $1.9 million, or 16 cents per share, on sales of $30.3 million. While income for the period, which ended June 30, was down $800,000 from 1990, it is an improvement over the $1 million the company lost in the second quarter.

Radius attributed the quarter-to-quarter growth to sales of its new Color Pivot monitor and its Radius Rocket CPU accelerator.

ChipSoft buys Softview, will combine tax-prep programs

San Diego — In a move to expand its coverage of the tax-preparation market, ChipSoft Inc. has acquired Oxnard, Calif.-based Softview Inc., developer of MacInTax, a major competitor for ChipSoft's TurboTax.

The deal between the two privately held companies was signed July 16. No details were released.

ChipSoft said it will combine what it considers the best of both products into a single package, called TurboTax, set for a fall release.

TurboTax, available for the Mac and DOS machines, has a list price of $75; MacInTax, with versions for the Mac and Windows, retails for $89.

Designed and produced on the RasterOps 24XLi

File Edit Style Item Page View Utilities Mail
Tennis Fashion Spread
Fashion
Serving up COLOR on Center Court!
Randall Thomas, Design Director for Mead Tennis Sportswear, sums up this year's tennis fashion philosophy as, "If you can't beat 'em, blind 'em!"
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INTRODUCING RASTEROPS' TEAM OF 21" GRAPHICS SYSTEMS. GAME. SET. MATCH.

RasterOps' new two-page 21" graphics systems offer the precision, speed, and high performance you've come to expect from the leader in color technology. From photorealistic imagery to video capture and graphics acceleration, our five new systems offer everything you need for winning graphic design.

The RasterOps® 8XLi and 24XLi bring graphic design to new heights. Both offer two full pages of text and graphics with on-board acceleration. What's more, the 8XLi can quickly and easily be upgraded to 24-bit color with the VRAM expansion kit. It's designed to protect your hardware investment by providing the ultimate in flexibility.

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8XLi, *with 24-bit upgrade*

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GRAY SCALE

ClearVue/GSXL, *for business productivity*

MONOCHROME

ClearVue/XL, *the low cost, high resolution system*

The RasterOps 24XLTV offers the same 24-bit True Color brilliance and on-board acceleration of the 24XLi, plus video capture so you can get all the best shots. The 8XL brings you 256 glorious colors with unequalled clarity, and is priced within reach. The ClearVue/GSXL gives you 256 shades of gray; perfect for business productivity. And when it comes to low cost, high resolution monochrome, the ClearVue/XL is a clear winner.

With these advancements in the art and science of color, it's no wonder RasterOps aces the competition. For a dynamic 21" system that's a perfect match for you, just see your local RasterOps dealer or call 1.800.SAY.COLOR.

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Scanner

From Page 1

scanning area of 8.5 by 11 inches, sources said.

▶ **Ofoto software.** The scanner is bundled with new software developed by Light Source Inc. of Greenbrae, Calif.

Called Ofoto, the software automatically adjusts a scanned image's tone, brightness and contrast to look like the original image, sources said. Ofoto also detects the size of the original image and sets up the scan for that size. It can "straighten" an image for users who have trouble aligning the original on the scanner plate.

Ofoto lets users set image size by typing in the final image's measurements or resizing the image frame. Users are not required to set resolution to achieve a desired image size. Ofoto also calibrates the gray-scale level to match the output capabilities of the selected printer.

Ofoto's tool palette includes a pencil, an eraser, a rotation tool and a magnifying glass. According to sources, Ofoto is not intended to replace image editors, such as Adobe Systems Inc.'s Photoshop, but instead is designed to automate the process of getting an accurate scan. Photoshop can be used for what it was originally intended: altering an image rather than "fixing" errors introduced in the scanning process, sources said.

Ofoto will be bundled with the One Scanner along with HyperScan, a stack that lets HyperCard control the new scanner. Ofoto also will work with the Apple Scanner.

▶ **LaserWriter IIF and IIG.** Both new 300-dpi printers are based on the Canon SX 8-ppm print engine. The LaserWriter IIF will reportedly use a 20-MHz 68030 and is expected to retail for $3,999. For $4,999, users can purchase the LaserWriter IIG, which reportedly has a 25-MHz 68030, a 68882 math coprocessor and built-in Ethernet.

The printers will be able to achieve higher-quality halftone output than now possible with 300-dpi printers, sources said.

Currently, when a halftone is made from a 300-dpi scanned image, most of the halftoning information is wasted when the image is output on a laser printer. With Apple's new technology, halftones can be made at 75 or 150 dpi, but each of those dots will contain eight bits of gray-scale information. The controllers on the new LaserWriters will then take this gray-scale information and modulate dot sizes to achieve halftone output of 600 dpi or higher.

"Improved halftoning technology would be a great way for Apple to set its printers off from the others. It would be extraordinarily useful for desktop publishers and people who use photos in in-house newsletters," said Rob Auster, a printer analyst at BIS Strategic Decisions in Norwell, Mass.

Apple LaserWriter II, IINT or IINTX owners will be offered a LaserWriter IIF controller-board upgrade for about $2,200 or a IIG upgrade for about $3,500, sources said. □

Outbound

From Page 1

ing the cursor more visible.

A full-motion, Mac SE-style keyboard is built in, but it does not have a numeric keypad. Below the space bar is a redesigned IsoPoint pointing device, now called the TrackBar.

The system is powered by slim, rechargeable camcorder batteries, good for three hours of system use. The system, like Apple's original Portable, goes into battery-saving sleep mode when not in use.

All Outbound's new notebook systems include several external ports: Apple Desktop Bus for keyboards, input devices and peripherals; a Mac-standard SCSI; external microphone and speaker; and two RS-422 serial/AppleTalk connections. A built-in microphone is compatible with System 7.0's Sound Manager, and a 2-inch, top-mounted speaker is included as well.

The Outbound Notebook comes in a dazzling array of configurations. The system can be bought with processors ranging from a 20-MHz 68000 to a 33-MHz 68030; with no hard drive or up to a 60-Mbyte internal drive; with 2 to 4 Mbytes of RAM; and up to 60 Mbytes of non-volatile RAM disk. A floating-point coprocessor is also available as an option.

Users can upgrade the system easily, sliding out a module board from the back of the unit containing the CPU, RAM, ROM and other swappable components.

Prices range from $2,899 to $4,299 for complete systems, including U.S. power supplies. Options include a universal power supply, an external modem, a numeric keypad utility and extra batteries.

Outbound is at 4840 Pearl East Circle, Boulder, Colo. 80301. Phone (303) 786-9200 or (800) 444-4607; fax (303) 786-8611. □

AppleMail

From Page 1

The engine's capabilities will go beyond text messages; it will, for example, be able to handle multiple data types, such as voice, animation and video, according to sources.

Third parties are likely to write extensions to the basic transport mechanism, adding services such as conferencing, scheduling and fax, said Pieter Hartsook, a Mac market analyst based in Alameda, Calif.

Standardization on one underlying mail engine also will make it possible to mix and match client mail applications, he said.

Although the behind-the-scenes engine will be transparent to users, they will eventually reap such benefits as tighter integration of mail into applications and powerful built-in encryption.

"Putting mail at the system level is a big step toward Apple's goal of moving from stand-alone personal computing to group communication and group computing," Hartsook said.

Meanwhile, Redmond, Wash.-based Microsoft Corp. is reportedly developing its own mail-transport layer, code-named Spitfire. Although Spitfire is primarily aimed at Windows users, it will support Macintosh clients. Like Apple, Microsoft hopes to bundle mail capabilities as part of its operating system. Unlike Apple, Microsoft will include client software. □

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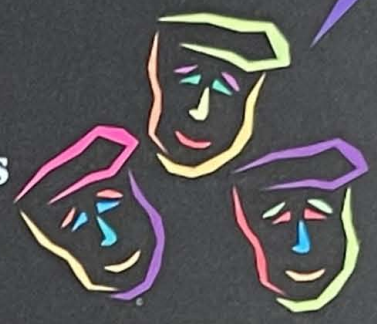
The MacWEEK Impact

MacWEEK volume buyers  are no small potatoes . Each MVB buys Macintosh products for an average of **74** Macs each.

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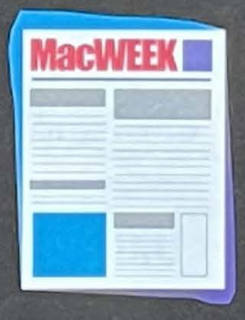
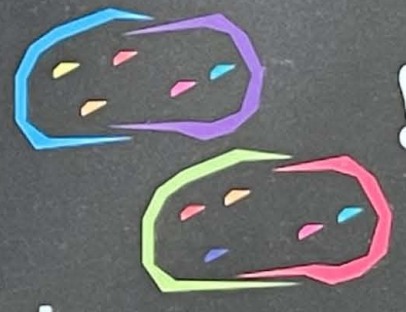
In fact, **98%** MacWEEK MVBs took purchase action based on MacWEEK 

advertisements in the last twelve months. That's big potatoes  !

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Desktop Mac

From Page 1

Mbytes of RAM, sources said.

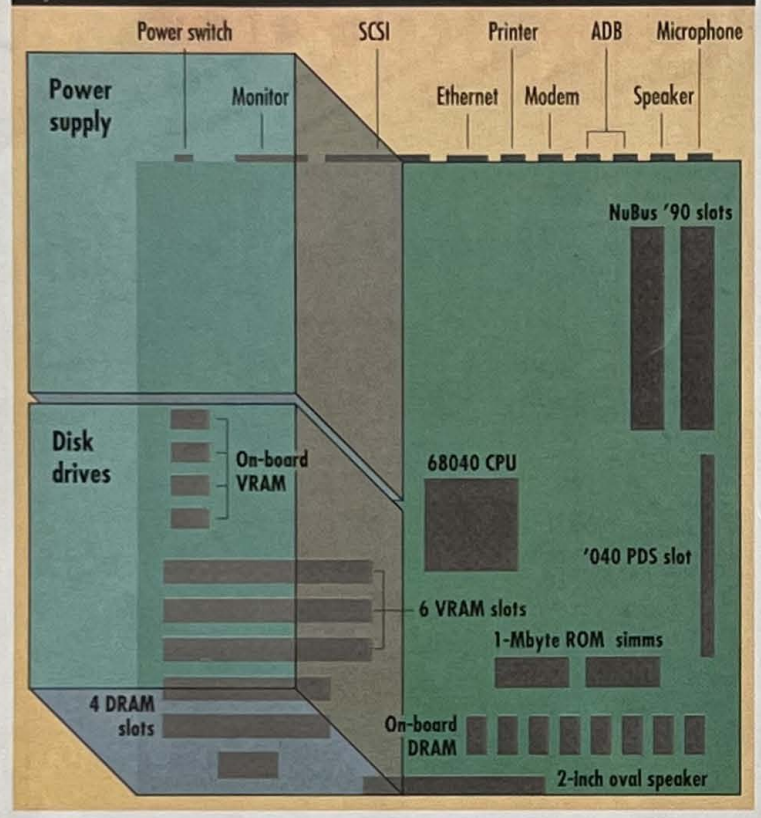
The '040 Mac also has built-in support for eight-bit color on monitors up to 13 inches. When the machine's six video-RAM SIMM slots are filled, it can produce 24-bit color on a 13-inch monitor or eight-bit color on a 21-inch monitor. The same 256-Kbyte VRAM SIMMs used in the Mac LC are used in the desktop '040. On-board video has about 80 percent of the performance of the Apple 8•24 GC card.

There are two NuBus slots and one '040 processor direct slot on the new Mac. Because the NuBus slots conform to the NuBus '90 standard, they can double the performance of compliant cards, sources said. Installing an '040 PDS card blocks one of the NuBus slots, limiting the machine to either one PDS and one NuBus or two NuBus cards.

The new Mac also comes with built-in Ethernet but requires an external tranceiver to connect to a network. In addition to the Apple AUI, the back panel also comes with a video connector, standard SCSI connector, two serial and two Apple Desktop Bus connectors. There are also speaker and microphone sockets.

The '040 desktop Mac comes with the new NCR 53C96 SCSI controller, which reportedly pumps up the speed of data throughput to double that of a Mac IIfx. The '040 system comes with the same power supply used in the IIci and has the same 1.44-Mbyte SuperDrive.

A look inside the '040 desktop Mac



Unfortunately, the power supply and disk drive caddy block access to VRAM and dynamic RAM slots, sources said. Users will need to remove both before upgrading. □

IIex

From Page 1

drive; and $7,000 with a 160-Mbyte hard drive.

The Mac IIex is expected to cost about $7,600 with a SuperDrive and 4 Mbytes of RAM and $8,900 with a 160-Mbyte hard drive.

"Overall, the ['040 Macs] sound like they have enough performance," said Mary Howlett, manager of management information technology at Hughes Aircraft Co. in Fullerton, Calif. "But pricing is still higher than we can afford."

▸ **Compatibility.** Other managers said they are less concerned about prices than compatibility. Many managers reported bloody noses with Apple's last high-performance entry, the IIfx, and were not anxious to repeat the experience.

"Our track record with the IIfx has not been good," said Steven Miller, hardware specialist at Rockwell International in Canoga Park, Calif. "That would be my main reservation about adopting a whole new processor platform from Apple. We'd have to do extensive testing before we bought any '040 Macs."

Users of the '040 Macs may face some serious compatibility issues. A/UX 2.0 will not run on the new Macs and will require a major upgrade that isn't expected until some months after the '040 Mac debut, sources said. Popular applications reportedly have problems working with Apple's '040 machines, including some of Microsoft's Mac suite. Fixes are expected before the '040 Macs ship, sources noted.

▸ **X-ing out the competition.** Other features of both machines that impressed Mac managers included built-in Ethernet and on-board video, which can be expanded to 24-bit color. The Mac IIex's ability to change to server mode with a key switch and to accommodate five NuBus cards and four internal half-height disk drives without going over its 300-watt power budget also were points in its favor (see MacWEEK, June 4).

Many managers were so impressed with the machine's capabilities that they believe the Mac IIex could replace Intel-based servers.

"I have a couple of corporate customers who are just waiting for these machines to ship so they can build a PC and Mac network with the Mac as the server," said Larry Barcot, president of Escape Inc., a Costa Mesa, Calif.-based corporate systems consulting firm. "The only thing that has been holding them back is that the IIfx didn't have the horsepower, it had compatibility problems and was too expensive. These machines sound like they'll do the trick."

Managers noted that the desktop '040 would finally give them a much needed upgrade path for the Mac IIcx and IIci. □

Microsoft posts earnings increase

Redmond, Wash. — Bleak financial news has been coming in all summer from Apple, IBM Corp., Compaq Computer Corp., Hewlett-Packard Co. and other computer hardware makers, but the sun's still shining on Microsoft Corp.

The software giant's earnings for fiscal 1991 were up 65.7 percent to $462.7 million, or $2.47 per share, the company reported last week. Sales climbed 55.8 percent, to $1.843 billion.

For the fourth quarter, which ended June 30, net income soared 73.2 percent compared with the same period last year, achieving a company record of $138.4 million. Revenues were up 56 percent, to $526.6 million. Net income as a percentage of revenue was 26.3 percent for the quarter. □

AppleTalk

From Page 1

work Management Protocol) from the TCP/IP world, Apple recently submitted specifications to the standards-setting Internet Engineering Task Force (IETF) that will form the basis for future AppleTalk network management.

Under the scheme, an SNMP "agent" running at each Mac will feed traffic statistics and other information, such as the Mac's processor type, system-software version and memory, into a central administration program, called a monitor (see MacWEEK, March 12).

The SNMP agent will work with Mac-based monitors, as well as with Unix or DOS-based monitors present on the network.

Apple has not decided whether it will produce its own network monitor, but will likely forgo the effort. "We see no need to duplicate efforts in an area where third parties are already doing a good job," said Robert Wohnoutka, manager of product marketing for AppleTalk network systems.

InterCon Systems Inc. of Herndon, Va., recently shipped the first Mac-based SNMP monitor, called WatchTower.

▸ **Dial-in AppleTalk.** Apple is currently developing a stripped-down version of the AppleTalk protocol, code-named 976, that will let a single remote user dial into AppleTalk LANs and appear as though the user was a local node (see story below).

Designed to save bandwidth, the standard would reduce "chatty" AppleTalk layers, such as the Routing Table Maintenance Protocol (RTMP) and would update directories of shared volumes less often than normal AppleTalk.

▸ **Wide-area AppleTalk.** Router vendors such as Shiva Corp. and Cayman Systems Inc. already have joined Apple and the IETF to set standards that will allow AppleTalk WANs to communicate through TCP/IP and to minimize excessive RTMP traffic.

The workgroup is currently formulating a standard for encapsulating AppleTalk in TCP/IP.

It is also exploring an alternative router protocol for efficient communication over large, non-AppleTalk networks. Apple proposed its own Apple Update Router Protocol (AURP), but the workgroup is also considering TCP/IP standards.

Still, when the committees and workgroups turn out their final specifications, Apple, being the final arbiter of Macintosh standards, reserves the right to implement the technology it deems fit for the Mac, Wohnoutka said. □

No go yet for AppleShare 3.0

By Margie Wylie

Cupertino, Calif. — After cooling their heels for nearly three years, AppleShare users still have a wait ahead for Version 3.0.

Once slated for release this fall, the new LAN file-server software hasn't entered beta yet and isn't likely to materialize until next year, according to sources. The new version is said to offer slightly better security, support for more users and System 7.0 compatibility. The current release, Version 2.0.1, does not run under Apple's new operating system.

The company's recent reorganization, layoffs and shifting priorities have left the fate of many planned networking products in flux.

"We've taken this as an opportunity to reprioritize our projects," said Jim Groff, marketing director of Apple's recently formed Enterprise Systems Division. "Multivendor networks, distributed systems, open systems, cross-platform connections, client-server architectures — those are the issues that we are stepping up to at Apple." □

Dial-up AppleTalk: 'The definition of portability'

AppleTalk vendors convened in Cupertino, Calif., this month to hash out product specifications for 976, an Apple engineering project to let individual users access AppleTalk networks via standard modems and telephone lines.

"Dial-up AppleTalk is the definition of portability," said one third-party AppleTalk developer who was told that 976 will be announced as part of the Apple notebook rollout in October (see MacWEEK, June 25).

Farallon Computing Inc.'s Liaison software router, Solana Electronics Inc.'s R-Server gateway and Shiva Corp.'s NetModems offer dial-up AppleTalk now. However, these products use non-interchangeable, proprietary techniques.

According to developers, Apple wants a single standard, but 976 fell short of AppleTalk vendors' expectations.

Reese Jones, Farallon chairman, said he favors incorporating 976 into the Macintosh Communications Toolbox, the communications framework built into System 7.0. If Apple ships 976 in its current form, "it would be a real mess," Jones said. Farallon recently demonstrated dial-up AppleTalk through a Comm Toolbox tool for Liaison. "976 is the work of a skunkworks group acting like this is the old, proprietary Apple," Jones said.

The 976 specification could be finalized as a driver added to AppleTalk-aware software, a Comm Toolbox tool, or a high-level protocol running on top of hardware or software routers.

"Dial-up AppleTalk relies on raw speed the Comm Toolbox can't deliver," said Alistair Woodman, Apple product marketing manager for the Comm Toolbox. "A Comm Toolbox tool would be half as fast as users require for point-to-point AppleTalk. We could do it, but users would fall asleep watching their desktops draw."

Developers reported that the meeting at Apple resulted in no agreements. — *By Mitch Ratcliffe*

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Delays and rumors of delays

This is the time of the year when most Macintosh products are out of the bag and most Mac managers are mainly interested in arranging reasonable accommodations in Boston and scanning the TV ads for information on the latest in sweat-retardant products. One reseller in Canada is even distributing a flier touting the new unannounced Macs and guaranteeing "low pre-introduction pricing." One could build a contest around the search for the best Yiddish word to describe this unbridled faith in the validity of the rumor mill. As for the proper English adjective, "foolish" comes to mind.

More-cautious souls would be inclined to hedge a bit until Apple speaks. Delays can result from a number of factors. Take Apple's alleged CD ROM-based home-entertainment product, for example: Rumors are circulating that the project has recently suffered a delay of about three months. As the story goes, the cause for this latest delay isn't the usual technological or manufacturing stumbling block or even the often whimsical decisions of marketing executives. Instead, everything was put on hold because the project sparked some interest from IBM during what was apparently an I'll-show-you-mine session. Apple now hopes to have the product on the shelf in time for next year's Christmas consumer-frenzy season.

Delay RISCs. Other sources claim Apple's sudden decision to go with the IBM RS/6000 RISC chip has substantially delayed the introduction of the new RISC-based Macs. The Knife hears that engineers — always a conservative lot — are whining about the change, observing that Apple management is acting as if the only tool necessary to successfully convert the project over to the new CPU is a chip puller.

Not that there are any real complaints about the RS/6000 itself, although it has been noted that IBM's willingness to consider minor modifications to the design, to accommodate Apple, cooled markedly shortly after the letter of intent was signed.

Deep thoughts. Considering the twin jolts of the Apple payroll-reduction program and the technological alliance with IBM, it's something of a miracle that *anything* is being produced at Apple. In this sort of environment, there are all kinds of things to discuss over the electronic water fountain, such as what shade of blue to use when repainting the logo in front of corporate headquarters.

The well-circulated "Deep Thoughts with John Sculley" MacroMind Director animation probably took a few man-hours to create, too. But at least this entertaining little diversion helps keep nervous employees' minds off the recurring rumors of even more personnel adjustments down the road.

Reciprocal trade. As reported earlier, part of Apple's deal with Sony for the manufacture of the "littlest laptop" is Apple's agreement (at Sony's insistence) not to market the unit in Japan. What isn't generally known, however, is that Apple intends to sell Outbound Systems' new notebook there in its place. Maybe if IBM bought Outbound, all this would be easier to monitor.

The news from Washington that the Great Recession has finally ended seemed to have come too late to affect the earnings reports last week of some of the biggest players in the industry. In some cases, the numbers were bad enough to inspire an appreciation for modern high-rise office-window design.

The shining exception, of course, is Microsoft, which seems structurally incapable of any activity that doesn't result in big-time profits. But the recent spate of Works competitors — both shipping and soon to ship — has put the company in the unusual position of being caught with its menu down. Sources tell the Knife that Microsoft's plans for Works 3.0 verge on ludicrous in their lack of innovation when compared with the new stuff. It could be back-to-the-drawing-board time. □

While a mere MacWEEK mug can't compare with, say, the debut of your firstborn (welcome aboard, Mose!), it ain't chopped liver, either. The Knife accepts insider tips at (415) 243-3500, fax (415) 243-3650, MCI (MactheKnife), AppleLink (MacWEEK) and CompuServe/Zmac.

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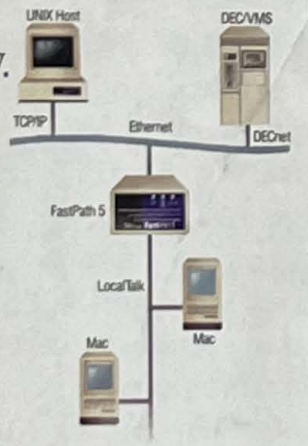

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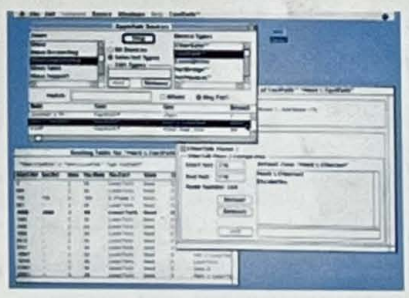

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